

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: December 11, 2000, 10:40:03 ; Search time 15.22 Seconds

(without alignments)
662,955 Million cell updates/sec

Title: US-09-270-910-37-COPY

Perfect score: 818

Sequence: 1 GVFNYETETTSVIPARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 182106 seqs, 63460219 residues

Total number of hits satisfying chosen parameters: 182106

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database :

1: pir1:*

2: pir2:*

3: pir3:*

4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	810	99.0	160	2	S05376 major pollen aller
2	790	96.6	160	2	G55699 major pollen aller
3	785	96.0	160	2	D55699 major pollen aller
4	784	95.8	160	2	E55699 major pollen aller
5	782	95.6	160	2	C55699 major pollen aller
6	781	95.5	160	2	F55699 major pollen aller
7	775	94.7	160	2	I55699 major pollen aller
8	735	89.9	160	2	A57427 major pollen aller
9	729	89.1	160	2	A55699 major pollen aller
10	725	88.6	160	2	H55699 major pollen aller
11	717	87.7	160	2	B55699 major pollen aller
12	702	85.8	160	2	S47250 gene 1-Sc1 protein
13	698	85.3	159	2	S47251 gene 1-Sc2 protein
14	616	75.3	160	2	S30054 major allergen Cor
15	616	75.3	160	2	S30055 major allergen Cor
16	610	74.6	160	2	S30053 major allergen Cor
17	607	74.2	160	2	S47249 gene 1-Sc3 protein
18	603	73.7	160	2	S30056 major allergen Cor
19	560	66.0	160	2	T17005 major allergen Mal
20	529	64.7	160	2	T17006 major allergen Mal
21	525	64.2	160	2	T17007 major allergen Mal
22	500.5	61.2	159	2	T17004 major allergen Mal
23	460.5	56.3	159	2	JC4276 Mal1 protein - ap
24	442.5	54.1	153	2	S51119 pathogenesis-relat
25	415.5	50.8	157	2	T09659 stress response ge
26	410.5	50.2	157	2	T09659 pathogenesis-relat
27	381	46.6	158	2	T06527 pathogenesis-relat
28	377	46.1	158	2	S42650 pathogenesis-relat
29	376	46.0	158	2	S20518 hypothetical prote

30	369.5	45.2	159	2	T06768 disease resistance
31	366	44.7	156	2	S47140 pathogenesis-relat
32	365	44.6	156	1	SNR1 pathogenesis-relat
33	362	44.3	155	2	S52664 pathogenesis-relat
34	362	44.3	158	2	S20517 pathogenesis-relat
35	357.5	43.7	155	1	SNR2 pathogenesis-relat
36	357.5	43.7	155	2	T11670 pathogenesis-relat
37	337.5	41.3	155	2	S35162 STH-21 protein - p
38	337.5	41.3	155	2	S35161 STH-2 protein - po
39	334.5	40.9	157	2	S12568 pathogenesis-relat
40	327.5	40.0	157	2	S42649 pathogenesis-relat
41	312	38.1	178	2	T07403 TSI-1 protein - to
42	311	38.0	155	2	S04552 pathogenesis-relat
43	309.5	37.8	154	2	S63984 major allergen Api
44	307	37.5	155	2	S04553 pathogenesis-relat
45	297	36.3	155	2	T14918 pathogenesis-relat

ALIGNMENTS

```
RESULT 1
S05376
Major pollen allergen Bet v 1 - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 31-Mar-1990 #sequence-revision 31-Mar-1990 #text-change 04-Feb-2000
C:Accession: S05376; JC4834; B53288
R:Bretteneder, H.; Pettenburger, K.; Balto, A.; Valenta, R.; Kraft, D.; Rumpold, H.; S
EMBO J. 8, 1935-1938, 1989
A:Title: The gene coding for the major birch pollen allergen Betv1, is highly homolo
A:Reference number: S05376; MUID:9005395
A:Accession: S05376
A:Molecule type: mRNA
A:Residues: 1-160 <BRE>
A:Cross-references: EMBL:X15877; NID:q17937; PIDN:CAA33887.1; PID:q17938
R:Kunzl, A.D.; Susani, M.; Lindemann, A.; Machius, M.; Visser, A.J.W.G.; Scheiner, C
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A:Title: Evidence for an alpha helical T cell epitope in the C-terminus of the ma
A:Reference number: JC4834; MUID:96254050
A:Accession: JC4834
A:Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-160 <KUN>
R:Rippen, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A:Title: The NH2-terminal amino acid sequence of the immunochemically partial ide
s) Car b 1 and oak (Quercus alba) Que a 1 pollens.
A:Reference number: A53288; MUID:92072607
A:Accession: B53288
A:Status: preliminary
A:Molecule type: Protein
A:Residues: 2-39, 'XX', 42-44 <IPS>
A:Cross-references: PID:q239734; PIDN:AAB20452.1
A:Experimental source: pollen
A:Keywords: pathogenesis-related protein
A:Note: the source is designated as Betula verrucosa
C:Comment: This protein induces Ige synthesis by B cells in a T cell dependent manner
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 99.0%; Score 810; DB 2; Length 160;
Best Local Similarity 98.7%; Pred. No. 1.7e-64;
Matches 157; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 GVFNYETETTSVIPARLFKAFILSDGNLPPRYAPPAISVENISGNGGPGTIKTSPE 60
DB 2 GVFNYETETTSVIPARLFKAFILSDGNLPPRYAPPAISVENISGNGGPGTIKTSPE 61
QY 61 GLPFKVKRDVDEVDHTNFKYNSVLEGPGIDTLEKISNEIKIYATPDGGSILKISNKY 120
DB 62 GLPFKVKRDVDEVDHTNFKYNSVLEGPGIDTLEKISNEIKIYATPDGGSILKISNKY 121
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OY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
|||||
Db 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 2
G55699
major pollen allergen Bet v 1j - European white birch
C:Species: Betula pendula (European white birch)
C>Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: G55699; S41902
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography-mass spectrometry
A:Reference number: A55699; MUID:95153322
A:Accession: G55699
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77271; NID:9452739; PIDN:CA54487.1; PID:9452740
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>

Query Match 96.6%; Score 790; DB 2; Length 160;
Best Local Similarity 95.0%; Pred. No. 1e-62;
Matches 151; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

OY 1 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISSVENISGNGPGTIKISFPE 60
|||||
Db 2 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISSVENISGNGPGTIKISFPE 61

OY 61 GLPFKYVDKRDVDEVDHTNFKYNSYIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
|||||
Db 62 GFPFKYVDKRDVDEVDHTNFKYNSYIEGGPVGDTLEKISNEIKIVATPDGGSILKISNKY 121

OY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
|||||
Db 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 3
D55699
major pollen allergen Bet v 1e - European white birch
C:Species: Betula pendula (European white birch)
C>Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: D55699; S41899
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography-mass spectrometry
A:Reference number: A55699; MUID:95153322
A:Accession: D55699
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77267; NID:9452733; PIDN:CA54483.1; PID:9452734
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1e #status experimental <MAT>

Query Match 96.0%; Score 785; DB 2; Length 160;
Best Local Similarity 94.3%; Pred. No. 2.8e-62;
Matches 150; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

OY 1 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISSVENISGNGPGTIKISFPE 60
|||||
Db 2 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISSVENISGNGPGTIKISFPE 61

OY 61 GLPFKYVDKRDVDEVDHTNFKYNSYIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
|||||
Db 62 GFPFKYVDKRDVDEVDHTNFKYNSYIEGGPVGDTLEKISNEIKIVATPDGGSILKISNKY 121

OY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
|||||
Db 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 4
E55699
major pollen allergen Bet v 1f/1 - European white birch
C:Species: Betula pendula (European white birch)
C>Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: E55699; S41905; S41900
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography-mass spectrometry
A:Reference number: A55699; MUID:95153322
A:Accession: E55699
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77268; NID:9452735; PIDN:CA54484.1; PID:9452736
A:Note: the source is designated as Betula verrucosa
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberl submitted to the EMBL Data Library, January 1994
A:Reference number: S41896
A:Accession: S41905
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77274; NID:9452745; PIDN:CA54490.1; PID:9452746
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1f/1 #status experimental <MAT>

Query Match 95.8%; Score 784; DB 2; Length 160;
Best Local Similarity 94.3%; Pred. No. 3.4e-62;
Matches 150; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

OY 1 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISSVENISGNGPGTIKISFPE 60
|||||
Db 2 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISSVENISGNGPGTIKISFPE 61

OY 61 GLPFKYVDKRDVDEVDHTNFKYNSYIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
|||||
Db 62 GFPFKYVDKRDVDEVDHTNFKYNSYIEGGPVGDTLEKISNEIKIVATPDGGSILKISNKY 121

OY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
|||||
Db 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 5
C55699
major pollen allergen Bet v 1d/h - European white birch
C:Species: Betula pendula (European white birch)
C>Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: C55699; S41901; S41898
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography-mass spectrometry
A:Reference number: A55699; MUID:95153322
A:Accession: C55699
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77266; NID:9452731; PIDN:CA54482.1; PID:9452732
A:Note: the source is designated as Betula verrucosa
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberl

submitted to the EMBL Data Library, January 1994

A:Reference number: S41896

A:Accession: S41901

A>Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-160 <SW2>

A:Cross-references: EMBL:X77270; NID:9452737; PIDN:CAA54486.1; PID:9452738

A:Note: the source is designated as Betula verrucosa

C:Superfamily: pathogenesis-related protein

C:Keywords: pollen

F:2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>

F:83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match

95.6%; Score 782; DB 2; Length 160;

Best Local Similarity 94.3%; Pred. No. 5.1e-62;

Matches 150; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

QY 1 GFVNYETETTSVIPARLFKAFILIDGDNLFPPKAPQAISSEVENISGNGGPGTIIKISFPE 60

DB 2 GFVNYETETTSVIPARLFKAFILIDGDNLFPPKAPQAISSEVENISGNGGPGTIIKISFPE 61

QY 61 GLPFFKYKDVDEVDHTNFKNYSVIEGPGIGDTLEKISNEIKIVATPDGGSILKISNKY 120

DB 62 GFPPKYKDVDEVDHTNFKNYSVIEGPGVGTLEKISNEIKIVATPDGGSILKISNKY 121

QY 121 HTKGDHEVKAQYKASKEMETLLRAVESYLLAHSDAYN 159

DB 122 HTKGNHEVKAQYKASKEMETLLRAVESYLLAHSDAYN 160

RESULT 6

F55699

major pollen allergen Bet v 1g - European white birch

C:Species: Betula pendula (European white birch)

C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999

C:Accession: F55699; S41896

R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch. M.

J. Biol. Chem. 270, 2607-2613, 1995

A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma

A:Reference number: A55699; M0ID:95155322

A:Accession: F55699

A:Molecule type: mRNA

A:Residues: 1-160 <SWO>

A:Cross-references: EMBL:X77269; NID:9452727; PIDN:CAA54485.1; PID:9452728

A:Note: the source is designated as Betula verrucosa

C:Superfamily: pathogenesis-related protein

C:Keywords: pollen

F:2-160/Product: major pollen allergen Bet v 1g #status experimental <MAT>

F:83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match

95.5%; Score 781; DB 2; Length 160;

Best Local Similarity 93.7%; Pred. No. 6.3e-62;

Matches 149; Conservative 6; Mismatches 4; Indels 0; Gaps 0;

QY 1 GFVNYETETTSVIPARLFKAFILIDGDNLFPPKAPQAISSEVENISGNGGPGTIIKISFPE 60

DB 2 GFVNYETETTSVIPARLFKAFILIDGDNLFPPKAPQAISSEVENISGNGGPGTIIKISFPE 61

QY 61 GLPFFKYKDVDEVDHTNFKNYSVIEGPGIGDTLEKISNEIKIVATPDGGSILKISNKY 120

DB 62 GFPPKYKDVDEVDHTNFKNYSVIEGPGVGTLEKISNEIKIVATPDGGSILKISNKY 121

QY 121 HTKGDHEVKAQYKASKEMETLLRAVESYLLAHSDAYN 159

DB 122 HTKGNHEVKAQYKASKEMETLLRAVESYLLAHSDAYN 160

RESULT 7

I55699

major pollen allergen Bet v 1l - European white birch

C:Species: Betula pendula (European white birch)

C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999

C:Accession: I55699; S41904

R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch. M.

J. Biol. Chem. 270, 2607-2613, 1995

A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid ch

A:Reference number: A55699; M0ID:95155322

A:Accession: I55699

A:Molecule type: mRNA

A:Residues: 1-160 <SWO>

A:Cross-references: EMBL:X77273; NID:9452743; PIDN:CAA54489.1; PID:9452744

A:Note: the source is designated as Betula verrucosa

C:Superfamily: pathogenesis-related protein

C:Keywords: pollen

F:2-160/Product: major pollen allergen Bet v 1l #status experimental <MAT>

F:83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match

94.7%; Score 775; DB 2; Length 160;

Best Local Similarity 93.1%; Pred. No. 2.1e-61;

Matches 148; Conservative 5; Mismatches 6; Indels 0; Gaps 0;

QY 1 GFVNYETETTSVIPARLFKAFILIDGDNLFPPKAPQAISSEVENISGNGGPGTIIKISFPE 60

DB 2 GFVNYETETTSVIPARLFKAFILIDGDNLFPPKAPQAISSEVENISGNGGPGTIIKISFPE 61

QY 61 GLPFFKYKDVDEVDHTNFKNYSVIEGPGIGDTLEKISNEIKIVATPDGGSILKISNKY 120

DB 62 GFPPKYKDVDEVDHTNFKNYSVIEGPGVGTLEKISNEIKIVATPDGGSILKISNKY 121

QY 121 HTKGDHEVKAQYKASKEMETLLRAVESYLLAHSDAYN 159

DB 122 HTKGNHEVKAQYKASKEMETLLRAVESYLLAHSDAYN 160

RESULT 8

A57427

major pollen allergen Bet v 1m/n - European white birch

C:Species: Betula pendula (European white birch)

C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999

C:Accession: A57427; S49450

R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine

ch. M.

J. Biol. Chem. 270, 2607-2613, 1995

A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr

A:Reference number: A55699; M0ID:95155322

A:Accession: A57427

A:Molecule type: mRNA

A:Residues: 1-160 <SWO>

A:Cross-references: GB:X81972; NID:9807868; PIDN:CAA57497.1; PID:9551640

R:Engel, E.; Krafitz, D.; Scheiner, O.; Breitenbach, M.; Ferreira, F.

submitted to the EMBL Data Library, October 1994

A:Description: Isoforms of BETV1, the major birch pollen allergen, analyzed by liquid

A:Reference number: S49450

A:Accession: S49450

A:Molecule type: preliminary

A>Status: preliminary

A:Residues: 1-160 <ENG>

A:Cross-references: EMBL:X82028; NID:9807869; PIDN:CAA57550.1; PID:9558561

A:Note: the source is designated as Betula verrucosa

C:Superfamily: pathogenesis-related protein

C:Keywords: pollen

F:2-160/Product: major pollen allergen Bet v 1m/n #status experimental <MAT>

Query Match

89.9%; Score 735; DB 2; Length 160;

Best Local Similarity 88.7%; Pred. No. 7.2e-58;

Matches 141; Conservative 8; Mismatches 10; Indels 0; Gaps 0;

QY 1 GFVNYETETTSVIPARLFKAFILIDGDNLFPPKAPQAISSEVENISGNGGPGTIIKISFPE 60

DB 2 GFVNYETETTSVIPARLFKAFILIDGDNLFPPKAPQAISSEVENISGNGGPGTIIKISFPE 61

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OY      61 GLPFKKYKDRVDEVDHNFKNYSYIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY   120
          | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db       62 GSPFKYKERVDEVDHANFKYSYSMIEGALDGTLEKICNEIKIVATPDGGSILKISNKY   121

OY      121 HTKGDEHVKAQVKASKEMGETLLRAVESYLLAHSDAYN   159
          |||||:::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db       122 HTKGDEHKAKEHMKAIKEKGALLRAVESYLLAHSDAYN   160

RESULT      9
A:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: A55699; S41401
R:Swooda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hofmann-Sommergruber, K.; Scheiner,
  ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A>Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A:Reference number: A55699; MUID:95155322
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77272; NID:g458478; PIDN:CA45442.1; PID:g452742
A>Note: The source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1k #status experimental <MAT>

Query Match      89.1% Score 729; DB 2; Length 160;
Best Local Similarity 88.1%; Pred. No. 2.4e-57;
Matches 140; Conservative 8; Mismatches 11; Indels 0; Gaps 0;

OY      1 GFVNJETETTSVIPARLFKAFILDGMLEFPKVADPAISSVENISGNNGPGTITKISFPE   60
          | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db       2 GFVNJETETTSVIPARLFKAFILEGDTLIPKVAQAISSENIENGGCGTITKITTFPE   61

OY      61 GLPFKKYKDRVDEVDHNFKNYSYIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY   120
          | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db       62 GSPFKYKERVDEVDHANFKYSYSMIEGALDGTLEKICNEIKIVATPDGGSILKISNKY   121

OY      121 HTKGDEHVKAQVKASKEMGETLLRAVESYLLAHSDAYN   159
          |||||:::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db       122 HTKGDEHKAKEHMKAIKEKGALLRAVESYLLAHSDAYN   160

RESULT      10
major pollen allergen Bet v 1k - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: H55699; S41903
C:Swooda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hofmann-Sommergruber, K.; Scheiner,
  ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A>Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A:Reference number: A55699; MUID:95155322
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77272; NID:g458478; PIDN:CA45448.1; PID:g452742
A>Note: The source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1k #status experimental <MAT>

Query Match      88.6% Score 725; DB 2; Length 160;
Best Local Similarity 87.4%; Pred. No. 5.5e-57;
Matches 139; Conservative 9; Mismatches 11; Indels 0; Gaps 0;

```

```

Oy      1  GVFNEETSTVTPARLFKAFILIDGDLPRKVAPOAISSENIISGNGPGTIKISPE 60
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db      2  GVFNESETSTVTPARLFKAFILLEGDLIRKVAPOAISSENIISGNGPGTIKIRPE 61

Oy      61  GLPFKYVDKRDVDEVDHTNFKNYSVTEGGPIGDTLEKISNEIKIVAPPDGGSIILKSNKY 120
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db      62  GSPFKYKVERDVEDVDHAFNFKYSYSMIEGALGDTLEKICNEIKIVAPPDGGSIILKSNKY 121

Oy      121  HTKGDHEVKARQVAKSKEMGETLLRAVESYLLAHSDAYN 159
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db      122  HTKGDHEKKAHFMAKIKERGEALLRAVESYLLAHSDAYN 160

RESULT 11
B55699
major pollen allergen Bet v 1c - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: B55699; S41897
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
Ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A:Reference number: A55699; M01D:95155322
A:Accession: B55699
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: EMBL:X77265; NID:g452729; P1DN:CA54481.1; P1D:g452730
A:Note: The source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1c #status experimental <MAT>

Query Match      87.7%; Score 717; DB 2; Length 160;
Best Local Similarity 86.8%; Pred. No. 2.8e-56;
Matches 138; Conservative 9; Mismatches 12; Indels 0; Gaps 0;

Oy      1  GVFNEETSTVTPARLFKAFILIDGDLPRKVAPOAISSENIISGNGPGTIKISPE 60
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db      2  GVFNESETSTVTPARLFKAFILLEGDLIRKVAPOAISSENIISGNGPGTIKIRPE 61

Oy      61  GLPFKYVDKRDVDEVDHTNFKNYSVTEGGPIGDTLEKISNEIKIVAPPDGGSIILKSNKY 120
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db      62  GSPFKYKVERDVEDVDHAFNFKYSYSMIEGALGDTLEKICNEIKIVAPPDGGSIILKSNKY 121

Oy      121  HTKGDHEVKARQVAKSKEMGETLLRAVESYLLAHSDAYN 159
        |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db      122  HTKGDHEKKAHFMAKIKERGEALLRAVESYLLAHSDAYN 160

RESULT 12
S47250
gene 1-scl protein - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C:Accession: S47250
R:Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A:Reference number: S47249
A:Accession: S47250
A:Status: Preliminary
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: EMBL:X77599; NID:g534909; P1DN:CA54694.1; P1D:g534910
A:Note: The source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein

Query Match      85.8%; Score 702; DB 2; Length 160;
Best Local Similarity 84.3%; Pred. No. 5.8e-55;
Matches 134; Conservative 9; Mismatches 16; Indels 0; Gaps 0;

```


GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 171.63 seconds
(without alignments)
15.528 Million cell updates/sec

Title: US-09-270-910-37

Perfect score: 819

Sequence: 1 GFNNYETETTSVTPARLRFK.....GELLRAVESYLLASDAVN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 164575 seqs, 16761186 residues

Total number of hits satisfying chosen parameters: 164575

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :
1: /cgnt_6/ptodata/2/1aa/5A_COMB.pep.*
2: /cgnt_6/ptodata/2/1aa/5B_COMB.pep.*
3: /cgnt_6/ptodata/2/1aa/6_COMB.pep.*
4: /cgnt_6/ptodata/2/1aa/PCTUS95_COMB.pep.*
5: /cgnt_6/ptodata/2/1aa/backfile1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	815	99.5	160	1	US-07-847-010-23
2	683	83.4	160	1	US-07-847-010-3
3	621	75.8	160	1	US-07-847-010-14
4	621	75.8	160	1	US-07-847-010-17
5	615	73.4	160	1	US-07-847-010-11
6	601	73.4	160	1	US-07-847-010-20
7	377	46.0	158	5	5312912-2
8	277.5	33.9	154	1	US-08-363-010-1
9	275.5	33.6	154	2	US-08-911-434A-4
10	236	28.8	158	3	US-08-199-219-6
11	78	9.5	1442	2	US-08-316-650-12
12	78	9.5	1442	4	PCT-US95-02251-12
13	77	9.4	669	2	US-08-357-533A-8
14	77	9.4	669	3	US-08-459-009-8
15	77	9.4	669	2	US-08-459-951-8
16	75.5	9.2	3135	1	US-08-323-170B-2
17	72	8.8	1577	2	US-08-793-824-2
18	71.5	8.7	341	2	US-08-538-711A-8
19	71.5	8.7	353	3	US-08-538-711A-7
20	70.5	8.6	522	5	RE34606-6
21	70	8.5	1008	2	US-08-680-326-30
22	69	8.4	159	3	US-09-142-514-4
23	68.5	8.4	836	1	US-08-426-627-6
24	68.5	8.4	837	1	US-08-426-627-23
25	68	8.3	436	3	US-08-669-378-2
26	68	8.3	436	3	US-08-669-378-4
27	68	8.3	436	3	US-08-669-378-6
28	68	8.3	436	3	US-08-669-378-10

29	68	8.3	436	3	US-08-669-378-12	Sequence 12, Appl
30	68	8.3	997	2	US-08-387-942C-4	Sequence 4, Appl
31	67.5	8.2	769	3	US-09-320-878-12	Sequence 12, Appl
32	67	8.2	780	1	US-08-485-621-2	Sequence 2, Appl
33	67	8.2	780	2	US-08-973-831-2	Sequence 2, Appl
34	67	8.2	780	4	PCT-US96-09530A-2	Sequence 2, Appl
35	66.5	8.1	866	1	US-08-386-727-8	Sequence 8, Appl
36	66.5	8.1	866	2	US-08-600-432A-8	Sequence 8, Appl
37	66.5	8.1	906	1	US-08-486-270-2	Sequence 8, Appl
38	66.5	8.1	906	3	US-08-367-264-2	Sequence 2, Appl
39	66	8.1	310	1	US-08-129-456A-37	Sequence 37, Appl
40	66	8.1	420	3	US-09-329-418-8	Sequence 8, Appl
41	66	8.1	518	3	US-09-329-418-3	Sequence 3, Appl
42	66	8.1	518	3	US-09-329-418-4	Sequence 4, Appl
43	66	8.1	518	3	US-09-329-418-9	Sequence 9, Appl
44	66	8.1	1183	2	US-08-447-031A-2	Sequence 2, Appl
45	65.5	8.0	416	3	US-08-910-505-2	Sequence 2, Appl

ALIGNMENTS

RESULT 1
US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5633495
GENERAL INFORMATION:
APPLICANT: Breiteneder, Helmo
APPLICANT: Reikertstorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann, - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Eder, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones IT, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 23:
SEQUENCE CHARACTERISTICS:
LENGTH: 160 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: birch (Betula sp.)

IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-23

Query Match 99.5%; Score 815; DB 1; Length 160;
Best Local Similarity 99.4%; Pred. No. 1.8e-83;
Matches 158; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 GVFNETTTSVIPAARLFKAFILDDGNLFPKVAPOAISSVENIEGNGPGTIKTSFPE 60
DB 2 GVFNETTTSVIPAARLFKAFILDDGNLFPKVAPOAISSVENIEGNGPGTIKTSFPE 61
QY 61 GLPFKYVDRDVEDVHTNFKYNSYIEGGPIGDTLEKISNEIKIYVATPDGGSILKISNKY 120
DB 62 GSPFYKYVERDVEDVHTNFKYNSYIEGGPIGDTLEKISNEIKIYVATPDGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 160

RESULT 2
US-07-847-010-3
Sequence 3, Application US/07847010
Patent No. 5693495
GENERAL INFORMATION:
APPLICANT: Breiteneder, Helmo
APPLICANT: Reikerstorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 160 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: Alder (Alnus sp.)

US-07-847-010-3

Query Match 83.4%; Score 683; DB 1; Length 160;
Best Local Similarity 81.1%; Pred. No. 9.5e-69;
Matches 129; Conservative 12; Mismatches 18; Indels 0; Gaps 0;

QY 1 GVFNETTTSVIPAARLFKAFILDDGNLFPKVAPOAISSVENIEGNGPGTIKTSFPE 60
DB 2 GVFNETTTSVIPAARLFKAFILDDGNLFPKVAPOAISSVENIEGNGPGTIKTSFPE 61
QY 61 GLPFKYVDRDVEDVHTNFKYNSYIEGGPIGDTLEKISNEIKIYVATPDGGSILKISNKY 120
DB 62 GSPFYKYVERDVEDVHTNFKYNSYIEGGPIGDTLEKISNEIKIYVATPDGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 160

RESULT 3
US-07-847-010-14
Sequence 14, Application US/07847010
Patent No. 5693495
GENERAL INFORMATION:
APPLICANT: Breiteneder, Helmo
APPLICANT: Reikerstorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 160 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN


```

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/363,010
FILING DATE: 23-DEC-1994
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Svensson, Leonard R.
REGISTRATION NUMBER: 30,330
REFERENCE/DOCKET NUMBER: 20-3628P
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
TELEFAX: (703) 205-8050
TELEX: 248345
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 154 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHEICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Daucus carota
STRAIN: Kuroda Gosun
US-08-363-010-1

```

```

Query Match      33.9%; Score 277.5; DB 1; Length 154;
Best Local Similarity 37.0%; Pred. No. 1.5e-23;
Matches 57; Conservative 33; Mismatches 63; Indels 1; Gaps 1;

QY 1 GVNFTETTSVIPARLFKAFILIDGNLFKPAPOAISVENIEGNGPGTIKKISFPE 60
   |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db 2 GAQSHSEITTSVSAEKIFSGIVLDVDVIFKAPGAYKSYD-VKGDGAGTVRITLPE 60
   |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|

QY 61 GLPKRYKDRVDEVDHNTFNKYNYSVIEGGPIGDTLEKISNEIKIYAPPDGGSIIKISKY 120
   |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db 61 GSPITSMVTFRIDAVNKKEALFYDSTVIDDILGFIETSIETHLVVVPPADGGSITKTAIF 120
   |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|

QY 121 HTKGDHEVKAQOVKASKEMGETILRAVESYLLAH 154
   ||||| |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db 121 HTKGDVAVPENIKFADQNATLFAIKAEVYLLIAN 154

```

```

RESULT 9
US-08-911-434A-4
Sequence 4, Application US/08911434A
Patent No. 5959176
GENERAL INFORMATION:
APPLICANT: TORIKAI, Satomi
APPLICANT: OEDA, Kenji
TITLE OF INVENTION: PLANT PROMOTER AND UTILIZATION THEREOF
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: BIRCH, STEWART, KOLASCH & BIRCH, LLP
STREET: P.O. BOX 747
CITY: FALLS CHURCH
STATE: VIRGINIA
COUNTRY: UNITED STATES OF AMERICA
ZIP: 22040
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/911,434A
FILING DATE: 12-AUG-1997
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:

```

```

NAME: Stewart, Raymond C.
REGISTRATION NUMBER: 21,066
REFERENCE/DOCKET NUMBER: 2185-0199P
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)205-8000
TELEFAX: (703)205-8050
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 154 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-911-434A-4

```

```

Query Match      33.6%; Score 275.5; DB 2; Length 154;
Best Local Similarity 37.0%; Pred. No. 2.6e-23;
Matches 57; Conservative 32; Mismatches 64; Indels 1; Gaps 1;

QY 1 GVNFTETTSVIPARLFKAFILIDGNLFKPAPOAISVENIEGNGPGTIKKISFPE 60
   |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db 2 GAQSHSEITTSVSAEKIFSGIVLDVDVIFKAPGAYKSYD-VKGDGAGTVRITLPE 60
   |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|

QY 61 GLPKRYKDRVDEVDHNTFNKYNYSVIEGGPIGDTLEKISNEIKIYAPPDGGSIIKISKY 120
   |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db 61 GSPITSMVTFRIDAVNKKEALFYDSTVIDDILGFIETSIETHLVVVPPADGGSITKTAIF 120
   |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|

QY 121 HTKGDHEVKAQOVKASKEMGETILRAVESYLLAH 154
   ||||| |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db 121 HTKGDVAVPENIKFADQNATLFAIKAEVYLLIAN 154

```

```

RESULT 10
US-08-199-219-6
Sequence 6, Application US/08199219
Patent No. 6031151
Patent No. 6031151 5698768
GENERAL INFORMATION:
APPLICANT: DRAPER, JOHN
TITLE OF INVENTION: CALLUS-SPECIFIC PROMOTERS
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: HALE AND DORR
STREET: 1455 PENNSYLVANIA AVENUE, N.W.
CITY: WASHINGTON
STATE: D.C.
ZIP: 20004
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/199,219
FILING DATE: 01 MARCH 1994
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA: APPLICATION NUMBER: PCT/GB92/01602
PRIOR APPLICATION DATA: FILING DATE: 02 SEPTEMBER 1992
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 158 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-199-219-6

```

```

Query Match      28.8%; Score 236; DB 3; Length 158;
Best Local Similarity 35.9%; Pred. No. 6.9e-19;
Matches 56; Conservative 30; Mismatches 66; Indels 4; Gaps 3;

QY 4 NYETETTSVIPARLFKAFILIDGNLFKPAPOAISVENIEGNGPGTIKKISFPE-GL 62
   ::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|

```


Db 5 SMSHEVAVNVAAGRMFKAMLDWNIKPIVDPFIAGSGVYSGDGVGTIREIKINPAI 64
QY 63 PKYKADRVDEVDHTNFKINYSIEGGPIGTLEKISNEIKIYATPPGSSILKISNXYHT 122
Db 65 PPSYKERLDFVDHDFEYKQTLVEGGGLKMFECATTHKFRPSSNGGLVKTASY-- 122
QY 123 KGDHEVKAEOVKSKEMGETLLRAVESYLLAHSDAY 158
Db 123 KILPGVADESAKA-KECITHMATAERYLLANFTAY 157

RESULT 11
US-08-316-650-12
; Sequence 12, Application US/08316650
; Patent No. 5942496
; GENERAL INFORMATION:
; APPLICANT: Bonadio, Jeffrey
; APPLICANT: Roesler, Blake J.
; APPLICANT: Goldstein, Steven A.
; APPLICANT: Liu, Wushan
; TITLE OF INVENTION: METHODS AND COMPOSITIONS
; TITLE OF INVENTION: FOR STIMULATING BONE CELLS
; NUMBER OF SEQUENCES: 15
; CORRESPONDENCE ADDRESSES:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P. O. Box 4433
; CITY: Houston
; STATE: Texas
; COUNTRY: USA
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/316,650
; FILING DATE: 30-SEP-1994
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/199,780
; FILING DATE: 30-SEP-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Parker, David L.
; REGISTRATION NUMBER: 32,165
; REFERENCE/DOCKET NUMBER: UMIC:008
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (512) 418-3000
; TELEFAX: (713) 789-2679
; TELEX: 79-0924
; INFORMATION FOR SEQ ID NO: 12:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 1442 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; US-08-316-650-12

Query Match 9.5%; Score 78; DB 2; Length 1442;
Best Local Similarity 24.1%; Pred. No. 7.8;
Matches 38; Conservative 18; Mismatches 52; Indels 50; Gaps 7;

QY 25 DGDNLFP-----KVAPQAISSVENIEGNGPGTIIKISFPEGL----- 62
Db 1130 DGSNGIPGPIGPPRGSRGSETGVPGPSPPGPPGPGI--DMSAFAGLGQREKG 1187
QY 63 --PKYKADRVDEVDHTNFKINYSIEGGPIGTLEKISNEIKIYATPPDG-----S 112
Db 1188 PDPMQIT--RADADSTLRQHDVEY-----DATILKSLNQIJSINSPPGSKRNPAITCQ 1239
QY 113 ILKISNRYHTKGDHEVKAEO-----VKASKEMGET 142

Db 1240 DLKICHPKMSGDYWDIPNGCTLDAMKVCNNMETGET 1277

RESULT 12
PCT-US95-02251-12
; Sequence 12, Application PC/TUS9502251
; GENERAL INFORMATION:
; APPLICANT:
; TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR STIMULATING BONE
; NUMBER OF SEQUENCES: 18
; CORRESPONDENCE ADDRESSES:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P. O. Box 4433
; CITY: Houston
; STATE: Texas
; COUNTRY: United States of America
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS/ASCII
; SOFTWARE: Patent Release #1.0, Version
; SOFTWARE: #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: PCT/US95/02251
; FILING DATE: CONCURRENTLY HERewith
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/316,650
; FILING DATE: 30-SEP-1994
; CLASSIFICATION:
; APPLICATION NUMBER: US 08/199,780
; FILING DATE: 18-FEB-1994
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Parker, David L.
; REGISTRATION NUMBER: 32,165
; REFERENCE/DOCKET NUMBER: UMIC009P--
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (512) 418-3000
; TELEFAX: (713) 789-2679
; TELEX: 79-0924
; INFORMATION FOR SEQ ID NO: 12:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 1442 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; PCT-US95-02251-12

Query Match 9.5%; Score 78; DB 4; Length 1442;
Best Local Similarity 24.1%; Pred. No. 7.8;
Matches 38; Conservative 18; Mismatches 52; Indels 50; Gaps 7;

QY 25 DGDNLFP-----KVAPQAISSVENIEGNGPGTIIKISFPEGL----- 62
Db 1130 DGSNGIPGPIGPPRGSRGSETGVPGPSPPGPPGPGI--DMSAFAGLGQREKG 1187
QY 63 --PKYKADRVDEVDHTNFKINYSIEGGPIGTLEKISNEIKIYATPPDG-----S 112
Db 1188 PDPMQIT--RADADSTLRQHDVEY-----DATILKSLNQIJSINSPPGSKRNPAITCQ 1239
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RESULT 13
US-08-357-533A-8

Mon Dec 11 10:50:29 2000

us-09-270-910-37.open.raii

Page 6

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2 STREET: 45 SOUTH STREET
3 CITY: HOPKINTON
4 STATE: MA
5 COUNTRY: USA
6 ZIP: 01748
7
8 COMPUTER READABLE FORM:
9 MEDIUM TYPE: Floppy disk
10 COMPUTER: IBM PC compatible
11 OPERATING SYSTEM: PC-DOS/MS-DOS
12 SOFTWARE: Patent In Release #1.0, Version #1.25
13
14 CURRENT APPLICATION DATA:
15 APPLICATION NUMBER: US/08/459,951
16
17 FILING DATE:
18 CLASSIFICATION: 435
19
20 PRIOR APPLICATION DATA:
21 APPLICATION NUMBER: US 08/357,533
22
23 FILING DATE: 16-DEC-1994
24
25 ATTORNEY/AGENT INFORMATION:
26 NAME: KELLY, ROBIN D
27 REGISTRATION NUMBER: 34,637
28 REFERENCE/DOCKET NUMBER: CRP-073FW
29
30 TELECOMMUNICATION INFORMATION:
31 TELEPHONE: (508)-435-9001
32 TELEFAX: (508)-435-0992
33
34 INFORMATION FOR SEQ-ID NO: 8:
35 SEQUENCE CHARACTERISTICS:
36 LENGTH: 669 amino acids
37 TYPE: amino acid
38 STRANDEDNESS: single
39 TOPOLOGY: linear
40 MOLECULE TYPE: protein
41 FEATURE:
42 NAME/KEY: Protein
43 LOCATION: 1..669
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45 OTHER INFORMATION: /note= "C ELEGANS RECEPTOR KINASE
46
47 US-08-459-951-8

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Query Match Similarity 9.48; Score 77; DB 3; Length 669;
Best Local Similarity 24.58; Pred No. 3,2;
Matches 39; Conservative 24; Mismatches 54; Indels 42; Gaps 9

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      || : : : : : || : : : : : || : : : : : || : : : : :
Db      216 ETENNVPWTM-----GDGAGSSVPEVAPIEQGSIMSTSGN-----SPPPGI 259

QY      63 PPKYKDRDEVDHINFEKNTSYISGCPIG-DLLEK--ISNEIKIYATPDGGSILKISNK 119
      : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db      260 MENNKKMDLVLEETS-----GSGMGPTLHLKLTIGQIRLGRVSGSFRGNVS-- 308

QY      120 YHTKGDHEYKAEQVASKREMGETLL---RAVESYLLAH 154
      : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db      309 ---KGDYRGEAAVAKVFNALDEPAFKETIEIETRLRLH 344
      : : : : : : : : : : : : : : : : : : : : : : : : : : :

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Search completed: December 11, 2000, 09:50:02
Job time: 499 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: December 11, 2000, 09:47:12 ; Search time 277.19 seconds
(without alignments)
18.326 Million cell updates/sec

Title: US-09-270-910-37

Perfect score: 819
Sequence: 1 GVFNYETETTSVIPARLRF.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 87993 seqs, 31947931 residues
Total number of hits satisfying chosen parameters: 87993

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	815	99.5	159	BV1A_BETVE	P15494 betula verr
2	795	97.1	159	BV1J_BETVE	P43183 betula verr
3	790	96.5	159	BV1E_BETVE	P43178 betula verr
4	789	96.3	159	BV1F_BETVE	P43179 betula verr
5	787	96.1	159	BV1D_BETVE	P43177 betula verr
6	786	96.0	159	BV1G_BETVE	P43180 betula verr
7	780	95.2	159	BV1L_BETVE	P43185 betula verr
8	740	90.4	159	BV1M_BETVE	P43186 betula verr
9	734	89.6	159	BV1B_BETVE	P45331 betula verr
10	730	89.1	159	BV1K_BETVE	P43184 betula verr
11	722	88.2	159	BV1C_BETVE	P43176 betula verr
12	683	83.4	159	MPAG_ALINGL	P38848 alnus gluti
13	640	78.1	159	MPA2_CARBE	P38849 carpinus be
14	619	75.6	159	MPA1_CARBE	P38849 carpinus be
15	615	75.1	159	MPAA_CORAV	Q08407 corylus ave
16	505	61.7	160	PRU1_PRAVAV	O24248 prunus aviu
17	463.5	56.6	158	MAIL_MALDO	P43311 malus domes
18	420.5	51.3	157	PRL_MEDSA	Q43560 medicago sa
19	386	47.1	158	DRM3_PPA	P14710 pismus sativ
20	382	46.6	158	AB18_PPA	Q06630 pismus sativ
21	381	46.5	158	SAM2_SOYBN	P26687 glycine max
22	377	46.0	158	DRR4_PEA	P27047 pismus sativ
23	374.5	45.7	159	DRR1_PEA	P13339 pismus sativ
24	370	45.2	155	PRL_PRAVAV	P25885 phaseolus v
25	362.5	44.3	155	PR2_PRAVAV	P25886 phaseolus v
26	349	42.6	156	L18B_LUPLU	P52779 lupinus lut
27	342.5	41.8	155	PRSI_SOLTU	P17641 solanum tub
28	342.5	41.8	155	PRSI_SOLTU	P17642 solanum tub
29	340	41.5	156	L18A_LUPLU	P52778 lupinus lut
30	332.5	40.6	157	AB17_PPA	Q06631 pismus sativ
31	330.5	40.4	158	PR2_PETCR	P27538 petroselinu
32	327	39.9	154	RNS1_PANGI	P80889 panax ginseng
33	316	38.6	155	PRL1_PETCR	P19417 petroselinu

34	312.5	38.2	153	1	RNS2_PANGI	P80890 panax ginseng
35	312	38.1	155	1	PRL1_PETCR	P19418 petroselinu
36	310.5	37.9	154	1	MPAG_APIGR	P49372 apium grave
37	301	36.8	157	1	RAP_TAROF	O49065 taraxacum o
38	278.5	34.0	154	1	DAUL_DAUCA	O04298 daucus car
39	236	28.8	158	1	PRI_ASPOF	Q05736 asparagus u
40	88	10.7	615	1	DNAR_THETH	Q56235 thermus aqu
41	80.5	9.8	956	1	CB31_YEAST	P32504 saccharomyc
42	79	9.6	387	1	YRS8_CAEEL	O10004 caenorhabdi
43	79	9.6	726	1	NU84_YEAST	P52891 saccharomyc
44	78	9.5	1459	1	CA12_MOUSE	P28481 mus musculu
45	77.5	9.5	889	1	NOBY_BRAJA	P15939 bradyrhizob

ALIGNMENTS

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RESULT 1
ID BV1A_BETVE STANDARD: PRT: 159 AA.
AC P15494: Q96369:
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-A (BET V 1-A).
GN BETVIA OR BETVI.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF I-34.
RC TISSUE=POLLEN:
RX MEDLINE: 90005335.
RA Breiteneder H., Pottenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN:
RX MEDLINE: 95153322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL SEQUENCE.
RX MEDLINE: 91317572.
RA Elsayed S., Vuk H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE: 97102431.
RA Gajhedre M., Osmark P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neeuwen R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -I- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -I- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -I- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED

```

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CC -----
DR EMBL: X15877; CA33887.1; -
DR EMBL: Z80098; CAB02153.1; -
DR EMBL: Z80099; CAB02154.1; -
DR EMBL: Z80104; CAB02159.1; -
DR PIR: S05376; S05376.
DR PDB: 1BTY; 12-AUG-97.
DR PDB: 1BV1; 17-SEP-97.
DR INTERPRO: IPR000916; -
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DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS.BETV1; 1.
DR Pathogenesis-related protein; Allergen; Multigene family;
KW 3D-structure.
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FT VARIANT 62 62 F -> L.
SQ SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;

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Matches 158; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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OY 61 GLPKRYKDRVDEVDHTNFKKYSYIEGGPIGDTLEKISNEIKIVATPDGGSILKSNKY 120
DB 61 GLPKRYKDRVDEVDHTNFKKYSYIEGGPIGDTLEKISNEIKIVATPDGGSILKSNKY 120
OY 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159
OY 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159

RESULT 2
BY1J_BETVE STANDARD: PRT: 159 AA.
ID BY1J_BETVE STANDARD: PRT: 159 AA.
AC P43183;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-J (BET V I-J).
GN BETV1J.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN;
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: X77271; CA54487.1; -
DR HSP: P15494; 1BTY.
DR INTERPRO: IPR000916; -
DR PFAM: PF00407; Bet_v_1; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS.BETV1; 1.
DR Pathogenesis-related protein; Allergen; Multigene family.
KW INIT_MET 0
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OY 61 GLPKRYKDRVDEVDHTNFKKYSYIEGGPIGDTLEKISNEIKIVATPDGGSILKSNKY 120
DB 61 GLPKRYKDRVDEVDHTNFKKYSYIEGGPIGDTLEKISNEIKIVATPDGGSILKSNKY 120
OY 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159
OY 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159

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BY1J_BETVE STANDARD: PRT: 159 AA.
ID BY1J_BETVE STANDARD: PRT: 159 AA.
AC P43178;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-E (BET V I-E).
GN BETV1E.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN;
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
DR EMBL: X77267; CA54483.1; -
DR HSSP: P15494; 1BTV.
DR INTERPRO: IPR000916; -
DR PFIAM: PF00407; Bet_v-I; 1.
DR PRINTS: PR00634; BETALBERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETVI; 1.
KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17316 MW; 3E752543EED1A08E CRC64;

Query Match 96.5%; Score 790; DB 1; Length 159;
Best Local Similarity 95.0%; Pred. No. 2.4e-61;
Matches 151; Conservative 6; Mismatches 2; Indels 0; Gaps 0;

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DB 1 GFVNTEETTSYIPARLFKAFILGDNLFPKYAPQAISSEVENIEGNGPGTIKISFPE 60
QY 61 GPFKVKRVDVDEHTNFKYISVIEGGPGDTLEKISNEIKIYATPNGSILKINRY 120
DB 61 GPFKVKRVDVDEHTNFKYISVIEGGPGDTLEKISNEIKIYATPNGSILKINRY 120
QY 121 HTKGDEHVAEQKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHVAEQKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 4
BVID BETVE STANDARD; PRT; 159 AA.
AC P43177;
DT 01-NOV-1995 (Rel. 32, Created)
DE 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-F/I (BET V 1-F/I).
GN BETVI AND BETVII.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN.
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
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CC -----
DR EMBL: X77268; CA54484.1; -
DR EMBL: X77274; CA54490.1; -
DR HSSP: P15494; 1BTV.
DR INTERPRO: IPR000916; -
DR PFIAM: PF00407; Bet_v-I; 1.
DR PRINTS: PR00634; BETALBERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETVI; 1.
KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17418 MW; 801F3BF8F56106FD CRC64;

KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17421 MW; 6063F9C82A71165C CRC64;

Query Match 96.3%; Score 789; DB 1; Length 159;
Best Local Similarity 95.0%; Pred. No. 2.9e-61;
Matches 151; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILGDNLFPKYAPQAISSEVENIEGNGPGTIKISFPE 60
DB 1 GFVNTEETTSYIPARLFKAFILGDNLFPKYAPQAISSEVENIEGNGPGTIKISFPE 60
QY 61 GPFKVKRVDVDEHTNFKYISVIEGGPGDTLEKISNEIKIYATPNGSILKINRY 120
DB 61 GPFKVKRVDVDEHTNFKYISVIEGGPGDTLEKISNEIKIYATPNGSILKINRY 120
QY 121 HTKGDEHVAEQKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHVAEQKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 5
BVID BETVE STANDARD; PRT; 159 AA.
AC P43177;
DT 01-NOV-1995 (Rel. 32, Created)
DE 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-D/H (BET V 1-D/H).
GN BETVI AND BETVII.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN.
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
CC -----
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CC or send an email to license@sdb-sdb.ch).
CC -----
DR EMBL: X77266; CA54482.1; -
DR EMBL: X77270; CA54486.1; -
DR HSSP: P15494; 1BTV.
DR INTERPRO: IPR000916; -
DR PFIAM: PF00407; Bet_v-I; 1.
DR PRINTS: PR00634; BETALBERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETVI; 1.
KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17418 MW; 801F3BF8F56106FD CRC64;

Query Match 96.1%; Score 787; DB 1; Length 159;
Best Local Similarity 95.0%; Pred. No. 4.3e-61;

Matches 151: Conservative 4; Mismatches 4; Indels 0; Gaps 0;

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QY 1 GVFYETETTSVIPAARLFKAFILIDGNLFKPAVPAQAISVYENINGNGPGTIKKISFPE 60
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 1 GVFYETETTSVIPAARLFKAFILIDGNLFKPAVPAQAISVYENINGNGPGTIKKINPE 60

QY 61 GPFKRYKDRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 61 GPFKRYKDRVDEVDHTNFKYNSVIEGGPGVDTLEKISNEIKIVATPDGGSILKISNKY 120

QY 121 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLASHDAYN 159
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 121 HTKGNHEVKAQVAKSKEMGETLLRAVESYLLASHDAYN 159
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RESULT 6

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BVL1_BETVE
ID BVL1_BETVE STANDARD: PRT: 159 AA.
AC P43180;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-G (BET V 1-G).
GN BETV1G.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A. AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN.
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Krieff D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.,
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning."
RL J. Biol. Chem. 270:2607-2613(1995).
```

```
CC -1 SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1 DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1 SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
CC
CC -----
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CC or send an email to license@isb-sib.ch).
```

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CC -----
CC EMBL: X77269; CA54485.1; -.
CC HSSP: P15494; 1RTV.
CC INTERPRO: IPR000916; -.
CC PFM: PF00407; Bet_v-1.1.
CC PRINTS: PR00634; BETALLERGEN.
CC PROSITE: PS00451; PATHOGENESIS_BETV1.1.
CC Pathogenesis-related protein; Allergen; Multigene family.
CC INIT_MET 0
CC SEQUENCE 159 AA; 17420 MW; BBAE6DCCE241DBB CRC64;
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Query Match 96.0%; Score 786; DB 1; Length 159;
Best Local Similarity 94.3%; Pred. No. 5.2e-61;
Matches 150; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

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QY 1 GVFYETETTSVIPAARLFKAFILIDGNLFKPAVPAQAISVYENINGNGPGTIKKISFPE 60
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 1 GVFYETETTSVIPAARLFKAFILIDGNLFKPAVPAQAISVYENINGNGPGTIKKINPE 60

QY 61 GPFKRYKDRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 61 GPFKRYKDRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Db 61 GPFKRYKDRVDEVDHTNFKYNSVIEGGPGVDTLEKISNEIKIVATPDGGSILKISNKY 120
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
QY 121 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLASHDAYN 159
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 121 HTKGNHEVKAQVAKSKEMGETLLRAVESYLLASHDAYN 159
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RESULT 7

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BVL1_BETVE
ID BVL1_BETVE STANDARD: PRT: 159 AA.
AC P43185;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-L (BET V 1-L).
GN BETV1L.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN.
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Krieff D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.,
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning."
RL J. Biol. Chem. 270:2607-2613(1995).
```

```
CC -1 SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1 DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1 SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
CC
CC -----
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CC or send an email to license@isb-sib.ch).
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CC -----
CC EMBL: X77273; CA54489.1; -.
CC HSSP: P15494; 1RTV.
CC INTERPRO: IPR000916; -.
CC PFM: PF00407; Bet_v-1.1.
CC PRINTS: PR00634; BETALLERGEN.
CC PROSITE: PS00451; PATHOGENESIS_BETV1.1.
CC Pathogenesis-related protein; Allergen; Multigene family.
CC INIT_MET 0
CC SEQUENCE 159 AA; 17408 MW; DE85F4ACC647BE0D CRC64;
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Query Match 95.2%; Score 780; DB 1; Length 159;
Best Local Similarity 93.7%; Pred. No. 1.7e-60;
Matches 149; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

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QY 1 GVFYETETTSVIPAARLFKAFILIDGNLFKPAVPAQAISVYENINGNGPGTIKKISFPE 60
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 1 GVFYETETTSVIPAARLFKAFILIDGNLFKPAVPAQAISVYENINGNGPGTIKKINPE 60

QY 61 GPFKRYKDRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 61 GPFKRYKDRVDEVDHTNFKYNSVIEGGPGVDTLEKISNEIKIVATPDGGSILKISNKY 120

QY 121 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLASHDAYN 159
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 121 HTKGNHEVKAQVAKSKEMGETLLRAVESYLLASHDAYN 159
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RESULT 8


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BV1M_BETVE
ID BV1M_BETVE STANDARD: PRT: 159 AA.
AC P43186;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DE MAJOR POLLEN ALLERGEN BET V 1-M/N (BET V I-M/N).
GN BETV1M AND BETV1N.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN;
RX MEDLINE: 95155322.
RA Snoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Schenler O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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-----
CC EMBL: X81972; CAAS7497.1; -
CC EMBL: X82028; CAAS7550.1; -
CC HSSP: P15494; 1BTV.
CC INTERPRO: IPR000916; -
CC PRAM: PF00407; Bet_v_1; 1.
CC PRINTS: PR00634; BETALLERGEN.
CC PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
CC Pathogenesis-related protein; Allergen; Multigene family.
CC INIT MET 0
CC SEQUENCE 159 AA; 17391 MW; ABA014F8849985E2 CRC64;

Query Match 90.4%; Score 740; DB 1; Length 159;
Best Local Similarity 89.3%; Pred. No. 4.7e-57;
Matches 142; Conservative 8; Mismatches 9; Indels 0; Gaps 0;

QY 1 GVFNYETETTSVIPARLFRAFLIDGNLFPKVAPOAISSVENIEGNGGPGTIKKISFPE 60
DB 1 GVFNYETETTSVIPARLFRAFLIDGNLIPKVAPOAISSVENIEGNGGPGTIKKITFPE 60
QY 61 GLPFKYKDRVDEVDHTNFYKNTSVIEGPIGDTLEKISNEIKIVATPPDGSILKISNKY 120
DB 61 GSPFKYKERVDEVDHANFYKNTSMIEGALGDTLEKICNEIKIVATPPDGSILKISNKY 120
QY 121 HTKGDHEMKAHQVASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEMKAHQVASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 9
ID BV1M_BETVE STANDARD: PRT: 159 AA.
AC P45431;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-B (BET V I-B).

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GN BETV1B.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN;
RX MEDLINE: 95155322.
RA Snoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Schenler O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC EMBL: X77200; CAAS4421.1; -
CC HSSP: P15494; 1BTV.
CC INTERPRO: IPR000916; -
CC PRAM: PF00407; Bet_v_1; 1.
CC PRINTS: PR00634; BETALLERGEN.
CC PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
CC Pathogenesis-related protein; Allergen; Multigene family.
CC INIT MET 0
CC SEQUENCE 159 AA; 17406 MW; ECC8D391E0C96267 CRC64;

Query Match 89.6%; Score 734; DB 1; Length 159;
Best Local Similarity 88.7%; Pred. No. 1.6e-56;
Matches 141; Conservative 8; Mismatches 10; Indels 0; Gaps 0;

QY 1 GVFNYETETTSVIPARLFRAFLIDGNLFPKVAPOAISSVENIEGNGGPGTIKKISFPE 60
DB 1 GVFNYETETTSVIPARLFRAFLIDGNLIPKVAPOAISSVENIEGNGGPGTIKKITFPE 60
QY 61 GLPFKYKDRVDEVDHTNFYKNTSVIEGPIGDTLEKISNEIKIVATPPDGSILKISNKY 120
DB 61 GSPFKYKERVDEVDHANFYKNTSMIEGALGDTLEKICNEIKIVATPPDGSILKISNKY 120
QY 121 HTKGDHEMKAHQVASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEMKAHQVASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 10
ID BV1K_BETVE STANDARD: PRT: 159 AA.
AC P43184;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-K (BET V I-K).
GN BETV1K.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.

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RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferrelira F., Engel E., Hoffman-Sommergruber K.,
RA Schreiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.,
RT "isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
DR EMBL: X77272; CA54488.1; -.
DR HSSP: P13494; IBTV.
DR INTERPRO: IPR000916; -.
DR PFAM: PF00407; Bet_v_1; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS006451; PATHOGENESIS_BETVI; 1.
KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17392 MW; AAF9E6F197C96517 CRC64;

Query Match 89.1%; Score 730; DB 1; Length 159;
Best Local Similarity 88.1%; Pred. No. 3.4e-56;
Matches 140; Conservative 9; Mismatches 10; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILDGDNLFPPVAQAQISSVENINGNGPGTIKISFPE 60
DB 1 GFVNSEETTSYIPARLFKAFILDEDTLIPVAQAQISSVENINGNGPGTIKITEPE 60
QY 61 GLPFKYVDRVDEVDHTNFKYNSVTEGGPIDTEKISNEKIYATPDGGSILKISNKY 120
DB 61 GSPFKYKRVDEVDHANFKYSYMEGALDTEKICNEIKIYATPDGGSILKISNKY 120
QY 121 HTKGDEHKAEOYKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHKAEMHKAKEKGEALLRAVESYLLAHSDAYN 159

RESULT 11
BVLIC_BETVE
ID BVLIC_BETVE STANDARD; PRT; 159 AA.
AC PA3176;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-C (BET V 1-C).
GN BETVIC.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN.
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferrelira F., Engel E., Hoffman-Sommergruber K.,
RA Schreiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.,
RT "isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.

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CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: X77265; CA54481.1; -.
DR HSSP: P13494; IBTV.
DR INTERPRO: IPR000916; -.
DR PFAM: PF00407; Bet_v_1; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS006451; PATHOGENESIS_BETVI; 1.
KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17383 MW; AAF9A95A7C96517 CRC64;

Query Match 88.2%; Score 722; DB 1; Length 159;
Best Local Similarity 87.4%; Pred. No. 1.7e-55;
Matches 139; Conservative 9; Mismatches 11; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILDGDNLFPPVAQAQISSVENINGNGPGTIKISFPE 60
DB 1 GFVNSEETTSYIPARLFKAFILDEDTLIPVAQAQISSVENINGNGPGTIKITEPE 60
QY 61 GLPFKYVDRVDEVDHTNFKYNSVTEGGPIDTEKISNEKIYATPDGGSILKISNKY 120
DB 61 GSPFKYKRVDEVDHANFKYSYMEGALDTEKICNEIKIYATPDGGSILKISNKY 120
QY 121 HTKGDEHKAEOYKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHKAEMHKAKEKGEALLRAVESYLLAHSDAYN 159

RESULT 12
MPGK_ALNGL
ID MPGK_ALNGL STANDARD; PRT; 159 AA.
AC P38948;
DT 01-FEB-1995 (Rel. 31, Created)
DT 01-FEB-1995 (Rel. 31, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN ALN G 1 (ALN G 1).
OS Alnus glutinosa (Alder).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Alnus.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN.
RX MEDLINE: 93094476.
RA Breiteneder H., Ferrelira F., Reikertorfer A., Duchene M.,
RA Valenta R., Hoffman-Sommergruber K., Ebner C., Breitenbach M.,
RA Kraft D., Schreiner O.,
RT "Complementary DNA cloning and expression in Escherichia coli of Aln
RT g 1, the major allergen in pollen of alder (Alnus glutinosa).";
RL J. Allergy Clin. Immunol. 90:909-917(1992).
CC -1- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
CC -----
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DR EMBL: S50892; AAB24432.1; -
DR HSSP: P15494; 1BTV.
DR INTERPRO: IPR000916; -
DR PFAM: PF00407; Bet_v_1; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
KW Allergen; Pathogenesis-related protein.
FT INIT_MET 0 BY SIMILARITY.
SQ SEQUENCE 159 AA; 17207 MW; 8DCB96C680688A6 CRC64;

Query Match 83.4%; Score 683; DB 1; Length 159;
Best Local Similarity 81.1%; Pred. No. 3.8e-52;
Matches 129; Conservative 12; Mismatches 18; Indels 0; Gaps 0;

QY 1 GVNVEETSTVIPAARLFKAFILDDGNLFPKPAQAISSEVENIEGNGPGTIKTSFPE 60
DB 1 GVNVEETSTVIPAARLFKAFILDDGNLFPKPAQAISSEVENIEGNGPGTIKTSFPE 60
QY 61 GLPFKTVKDRVDEVDHTNFKYNSVIEGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
DB 61 GLPFKTVKDRVDEVDHTNFKYNSVIEGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
QY 121 HTKGDEHYKAEQYKASKEMGELLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHYKAEQYKASKEMGELLRAVESYLLAHSDAYN 159

RESULT 13
MPA1_CARBE STANDARD; PRT; 159 AA.
AC P38950;
DR 01-FEB-1995 (Rel. 31, Created)
DT 01-FEB-1995 (Rel. 31, Last sequence update)
DE 01-NOV-1997 (Rel. 35, Last annotation update)
MAJOR POLLEN ALLERGEN CAR B 1, ISOFORM 2 (CAR B 1).
OS Carpinus betulus (Hornbeam).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Carpinus.
RN [1]

RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN;
RX MEDLINE: 92293162.
RA Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT PCR based cloning and sequencing of isogenes encoding the tree
RT pollen major allergen Car b 1 from Carpinus betulus, hornbeam.;
RL Mol. Immunol. 29:703-711(1992).
CC -1- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.

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DR EMBL: X66932; CAA47366.1; -
DR HSSP: P15494; 1BTV.
DR INTERPRO: IPR000916; -
DR PFAM: PF00407; Bet_v_1; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
KW Allergen; Pathogenesis-related protein; Multigene family.
FT INIT_MET 0 BY SIMILARITY.
SQ SEQUENCE 159 AA; 17356 MW; 7D55C78195C1C551 CRC64;

Query Match 78.1%; Score 640; DB 1; Length 159;
Best Local Similarity 75.5%; Pred. No. 1.9e-48;
Matches 120; Conservative 20; Mismatches 19; Indels 0; Gaps -0;

QY 1 GVNVEETSTVIPAARLFKAFILDDGNLFPKPAQAISSEVENIEGNGPGTIKTSFPE 60
DB 1 GVNVEETSTVIPAARLFKAFILDDGNLFPKPAQAISSEVENIEGNGPGTIKTSFPE 60
QY 61 GLPFKTVKDRVDEVDHTNFKYNSVIEGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
DB 61 GLPFKTVKDRVDEVDHTNFKYNSVIEGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
QY 121 HTKGDEHYKAEQYKASKEMGELLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHYKAEQYKASKEMGELLRAVESYLLAHSDAYN 159

RESULT 14
MPA1_CARBE STANDARD; PRT; 159 AA.
AC P38949;
DR 01-FEB-1995 (Rel. 31, Created)
DT 01-FEB-1995 (Rel. 31, Last sequence update)
DE 01-NOV-1997 (Rel. 35, Last annotation update)
MAJOR POLLEN ALLERGEN CAR B 1, ISOFORMS 1A AND 1B (CAR B 1).
OS Carpinus betulus (Hornbeam).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Carpinus.
RN [1]

RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN;
RX MEDLINE: 92293162.
RA Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT PCR based cloning and sequencing of isogenes encoding the tree
RT pollen major allergen Car b 1 from Carpinus betulus, hornbeam.;
RL Mol. Immunol. 29:703-711(1992).
CC -1- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF ISOFORM 1A.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.

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DR EMBL: X66932; CAA47366.1; -
DR EMBL: X66918; CAA47357.1; -
DR HSSP: P15494; 1BTV.
DR INTERPRO: IPR000916; -
DR PFAM: PF00407; Bet_v_1; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
KW Allergen; Pathogenesis-related protein; Multigene family.
FT INIT_MET 0 BY SIMILARITY.
FT VARIANT 37 V -> A (IN ISOFORM 1B).
FT VARIANT 62 I -> S (IN ISOFORM 1B).
FT VARIANT 132 K -> E (IN ISOFORM 1B).
SQ SEQUENCE 159 AA; 17271 MW; 21D0D17A38851E8E CRC64;

Query Match 75.6%; Score 619; DB 1; Length 159;
Best Local Similarity 73.0%; Pred. No. 1.2e-46;
Matches 116; Conservative 21; Mismatches 22; Indels 0; Gaps 0;

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Db      1 GVFNEATPTSPVIAARLRKFSYVDGDRLIKVAPOYLSSVENNGGSGGTIIKNIFAE 60
        ||||| ||||||| :||| | ||| | ||||| ||||| ||||| ||||| |||||
Qy      61 GLPRKYAVDDEVDHNFKNISYSBGPIDGLEKINSERIKVAFPDGGSLIKSNSKY 120
        ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      61 GIPEFVEKEREDVDNANFKNYIVIEDVDGLDLERKSHLKTIVAPGGGSIVKISSKF 120
        ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Qy      121 HTKGDEHKAEQVANSKEMGETLLRAVESYLLARSDAYN 159
        || ||| ||| ||| ||| ||||| ||||| ||||| ||||| ||||| |||||
Db      121 HAKGYHEVNAEKMGAKMAEKLRLRAVESYLLANTAEYN 159
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RESULT 15
MPAA_CORAV

ID	MPAA	CORAV	STANDARD:	PRI:	159	AA.
AC	008407;					
AD	01-OCT-1994	(Rel. 30, Created)				
DT	01-FEB-1995	(Rel. 31, Last sequence update)				
DT	01-NOV-1997	(Rel. 35, Last annotation update)				
DE	MAJOR POLLEN ALLERGEN	COR A 1, ISOFORMS 5, 6, 11 AND 16 (COR A 1).				
OS	Corylus avellana	(European hazel).				
OC	Eukaryota: Viridiplantae: Embryophyta: Tracheophyta; Spermatophyta;					
OC	Magnoliophyta: eudicotyledons: core eudicots: Rosidae; eustosids I;					
OC	Fagales: Betulaceae; Corylus.					
FN	[1]					
RP	SEQUENCE FROM N.A.					
RC	TISSUE-POLLEN:					
RX	MEDLINE: 93185652.					
RA	Breiteneder H., Ferreira F., Hoffmann-Sommergruber K., Edner C.,					
RT	Breitenbach M., Rumpold H., Kraft D., Scheiner O.,					
RT	"Four recombinant isoforms of Cor a 1, the major allergen of hazel					
RL	pollen, show different IgE-binding properties.";					
RL	Eur. J. Biochem 212:345-362(1993)					
CC	-1- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH					
CC	AMERICA AND USSR. THE COR A 1 ISOFORMS DISPLAY DIFFERENT ANTIGENIC					
CC	AND ALLERGENIC PROPERTIES.					
CC	-1- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CLONE COR A 1/5.					
CC	-1- SIMILARITY: BELONGS TO THE BETULI FAMILY OF PATHOGENESIS-RELATED					
CC	PROTEIN.					
CC	-----					
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CC	or send an email to license@isb-sdb.ch).					

CC	Sequence	Accession	Gene	Species	Length	Start	Stop	Strand	Orientation	Notes
DR	EMBL	X70999	CAA50327.1	Human	1000	1	1000	+	+	
DR	EMBL	X71000	CAA50328.1	Human	1000	1	1000	+	+	
DR	EMBL	X70997	CAA50325.1	Human	1000	1	1000	+	+	
DR	EMBL	X70998	CAA50326.1	Human	1000	1	1000	+	+	
DR	PIR	S30053	S30053	Human	1000	1	1000	+	+	
DR	HSSP	P15494	1bmv	Human	1000	1	1000	+	+	
DR	INTERPRO	IPR000916		Human	1000	1	1000	+	+	
DR	PFAM	PF00407	Bcl-2	Human	1000	1	1000	+	+	
DR	PRINTS	PRO0634	BETALIBERGEN	Human	1000	1	1000	+	+	
DR	PROSITE	PS00451	PATHOGENESIS	Human	1000	1	1000	+	+	
KW	Allergen		Pathogenesis-related protein	Human	1000	1	1000	+	+	
FT	INIT	MET		Human	1000	1	1000	+	+	
FT	VARIANT		V -> A (IN CLONE COR A 1/11)	Human	1000	1	1000	+	+	
FT	VARIANT		P -> T (IN CLONE COR A 1/11)	Human	1000	1	1000	+	+	
FT	VARIANT		E -> S (IN CLONE COR A 1/16)	Human	1000	1	1000	+	+	
FT	VARIANT		T -> K (IN CLONE COR A 1/16)	Human	1000	1	1000	+	+	
FT	VARIANT		H -> S (IN CLONE COR A 1/6 AND 1/16)	Human	1000	1	1000	+	+	
FT	VARIANT		I -> T (IN CLONE COR A 1/16)	Human	1000	1	1000	+	+	
FT	VARIANT		M -> I (IN CLONE COR A 1/11)	Human	1000	1	1000	+	+	
QO	SEQUENCE	159 AA	17381 MW	EDF5E2A218EBD768 CRC64	1000	1	1000	+	+	

Matches	115; Conservative	22; Mismatches	22; Indels	0; Gaps
QY	1	GVTNYEETTSVTPARLTKFATLIDGDNLFVPAVAQAISSVENVIEGNGPGPTIKTSIFE	60	
Db	1	GVTNYEETTSVTPARLTKFATLIDGDNLFVPAVAQAISSVENVIEGNGPGPTIKTSIFE	60	
QY	61	GLPEFKYKDVDDVDHDTNFKYNSVIEGGPIJDTLEKTSNEKTKIVANPDGGSILKISNKY	120	
Db	61	GLPEFKYKDVDDVDHDTNFKYNSVIEGGPIJDTLEKTSNEKTKIVANPDGGSILKISNKY	120	
QY	121	HTKGDHEVKAQYKASKENGETLLRAVESYLLIASHDAYN	159	
Db	121	HTKGDHEVKAQYKASKENGETLLRAVESYLLIASHDAYN	159	
Db	121	HTKGDHEVKAQYKASKENGETLLRAVESYLLIASHDAYN	159	

Search completed: December 11, 2000, 10:36:31
Job time: 2959 sec

Query Match	75.18; Score 615; DB 1; Length 159;
Best-Local Similarity	72.38; Pred. No. 2.6e-46;

GenCore version 4.5
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OM nucleic - nucleic search, using sw model

Run on: December 11, 2000, 10:23:53 ; Search time 993.56 Seconds

(Without alignments)
2110.027 Million cell updates/sec

Title: US-09-270-910-36

Perfect score: 480
Sequence: 1 gggtgttattatgagac.....actcgatgcctacaactaa 480

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 1033670 seqs, 2183789903 residues

Total number of hits satisfying chosen parameters: 2067340

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database :

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1: gb_ba1:*
2: gb_ba2:*
3: gb_om:*
4: gb_ov:*
5: gb_pat:*
6: gb_ph:*
7: gb_pl1:*
8: gb_pl2:*
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11: gb_pr3:*
12: em_fun:*
13: em_hum1:*
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86: gb_htg22:*
87: gb_htg23:*
88: gb_ro:*
89: gb_sts1:*
90: gb_sts2:*
91: gb_sy:*
92: gb_un:*
93: gb_v11:*
94: gb_v12:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB ID	Description
1	480	100.0	483	8	BVZ80104
2	473.6	98.7	483	8	BVZ80106
3	470.4	98.0	672	5	I77098
4	470.4	98.0	691	8	BVBETV1
5	468.8	97.7	483	8	BVAJ2107
6	468.8	97.7	483	8	BVCC11
7	468.8	97.7	483	8	BVCC31
8	468.8	97.7	483	8	BVZ80098
9	467.4	97.4	480	5	I77099
10	467.2	97.3	483	8	BVAJ2108
11	467.2	97.3	483	8	BVZ80099
12	465.6	97.0	483	8	BVAJ2109


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13 465.6 97.0 483 8 BVE6906 AJ006906 Betula ve
14 465.6 97.0 483 8 BV280105 280105 B. verrucosa
15 462.4 96.3 483 8 BV280101 280101 B. verrucosa
16 460.8 96.3 483 8 BV280103 280103 B. verrucosa
17 460.8 96.0 483 8 BVE6904 AJ006904 Betula ve
18 460.8 96.0 483 8 BVE6911 AJ006911 Betula ve
19 460.8 96.0 483 8 BV280102 280102 B. verrucosa
20 459.2 95.7 483 7 AF124838 AF124838 Betula pe
21 459.2 95.7 483 8 BVE6910 AJ006910 Betula ve
22 457.6 95.3 483 8 BVE6908 AJ006908 Betula ve
23 454.4 94.7 483 8 BVE6907 AJ006907 Betula ve
24 452.8 94.3 483 8 BVE6903 AJ006903 Betula ve
25 452.8 94.3 483 8 BV280100 280100 B. verrucosa
26 451.8 94.1 490 8 BVE6905 AJ006905 Betula ve
27 450.2 93.8 490 8 BVE6913 AJ006913 Betula ve
28 449.6 93.7 483 8 BVAJ2110 AJ002110 Betula ve
29 448 93.3 483 7 AF124837 AF124837 Betula pe
30 448 93.3 677 8 BVBETV1D X77266 B. verrucosa
31 446.4 93.0 483 8 BVAJ2106 AJ002106 Betula ve
32 446.4 93.0 483 8 BVE6914 AJ006914 Betula ve
33 444.8 92.7 483 8 BVE6909 AJ006909 Betula ve
34 441.6 92.0 571 8 BVBETV1L X77273 B. verrucosa
35 441.6 92.0 677 8 BVBETV1H AJ006915 Betula ve
36 438.4 91.3 483 8 BVE6915 AJ006915 Betula ve
37 438.4 91.3 701 8 BVBETV1G X77269 B. verrucosa
38 435.2 90.7 572 8 BVBETV1J X77271 B. verrucosa
39 433.6 90.3 572 8 BVBETV1F X77268 B. verrucosa
40 433.6 90.3 572 8 BVBETV1I X77274 B. verrucosa
41 432 90.0 572 8 BVBETV1E X77267 B. verrucosa
42 425.6 88.7 483 8 BVE6912 AJ006912 Betula ve
43 424 88.3 7 AF124839 AF124839 Betula pe
44 417.6 87.0 687 8 BVBETV1M X81972 B. verrucosa
45 417.6 87.0 714 8 BVBETV1B X77200 B. verrucosa
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ALIGNMENTS

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RESULT 1
LOCUS BV280104 483 bp mRNA PLN 12-SEP-1996
DEFINITION B.verrucosa mRNA for pollen allergen Betv1 (clone 2227).
ACCESSION 280104.1 GI:1542868
VERSION 280104.1 GI:1542868
KEYWORDS Betv1; pollen allergen.
SOURCE European white birch.
ORGANISM Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
Rosidae; Fagales; Betulaceae; Betula.
REFERENCE 1 (bases 1 to 483)
AUTHORS Larsen,J.N.
TITLE PCR based cloning and sequencing of isogenes encoding the tree
pollen major allergen Bet v 1 from Betula verrucosa, white birch
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 483)
AUTHORS Larsen,J.N.
TITLE Direct Submission
JOURNAL Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES
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/db_xref="taxon:3505"
/tissue_type="pollen obtained from Allergen, Sweden"
/clone="2227"
/note="Obtained by PCR using cDNA as template"
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/db_xref="GI:1542869"
/db_xref="SWISS-PROT:P15494"
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1026

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"
BASE COUNT 148 a 110 c 122 g 103 t
ORIGIN
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Query Match 100.0%; Score 480; DB 8; Length 483;
Best Local Similarity 100.0%; Pred. No. 2,1e-126;
Matches 480; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Db 4 GGTTGTTTATTTATGTAGCTGAGACACCCTGTTATCCACACTGTGACTGTTCAAG 63
Qy 61 gcccttccttgatggcgataacctcttcacaaaggttgaccccaagcattagcgt 120
Db 64 GCCTTTATCTGTGATGGCGATTAACCTCTTCCAAAGGTTGACCCCAAGCCATTACAGT 123
Qy 121 gtgaaacattgaaagaaatgagagccctgagacattaaagaatcagcttcacga 180
Db 124 GTTGAANAACATTGAAGAAATGAGAGCCCTGGAACCATTTAAGAGATCAAGCTTTCCGGA 183
Qy 181 ggcctcccttcaagtaagtcgtgaagacagattgatgaggttgacacacaaactcaaa 240
Db 184 GGCTCCCTTTCAGATGACGTGAGAGACAGATGTGATGAGGTGAGACACAAACTTCMAA 243
Qy 241 tacattacagcgatgacgagggcggtcccatatggcgacacatcttgagaagaatctcaac 300
Db 244 TACAAATTACAGCGGTGATGAGGCGGTCCCATGAGGAGNACATTTGAGAAAGTCTTCAAC 303
Qy 301 gagataagaatagtggaacccctgatggagatccatcttgagaatcagaacaaagtac 360
Db 304 GAGATTAAGATGATGGCAACCCCTGATGAGAGATCCATCTTGAAGATCAGCAACAAGTAC 363
Qy 361 cacaccaaggtgaccatgagtgagtgaaagcagagcaggttaaggaagtaaaagatgggc 420
Db 364 CACACCAAGGTGACCATGAGTGAGGACGAGACAGATTAAAGCAAGTAAAGAAATGGGC 423
Qy 421 gagacactttgagggcggttgagagctactctttgcaacatccgagtctcaactaa 480
Db 424 GAGACACTTTGAGGGCGGCTTGAGAGCTTACCTTGCCACACTCCGATCTTACAACTAA 483
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RESULT 2
LOCUS BV280106 483 bp mRNA PLN 12-SEP-1996
DEFINITION B.verrucosa mRNA for pollen allergen Betv1 (clone 2301).
ACCESSION 280106
VERSION 280106.1 GI:1542872
KEYWORDS Betv1; pollen allergen.
SOURCE European white birch.
ORGANISM Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
Rosidae; Fagales; Betulaceae; Betula.
REFERENCE 1 (bases 1 to 483)
AUTHORS Larsen,J.N.
TITLE PCR based cloning and sequencing of isogenes encoding the tree
pollen major allergen Bet v 1 from Betula verrucosa, white birch
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 483)
AUTHORS Larsen,J.N.
TITLE Direct Submission
JOURNAL Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge,
Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES
source
1..483
/organism="Betula pendula"
/db_xref="taxon:3505"
/tissue_type="pollen obtained from Allergen, Sweden"
/clone="2301"
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/note="obtained by PCR using cDNA as template"
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/codon_start=1
/product="pollen allergen Bet v 1"
/protein_id="CA02161.1"
/db_xref="GI:1542873"
/translation="MGVFNVEETTSVIAARLFKAFLIDGNLPPKVAPOAIISSVEN
TEGNGPGTIKISPEGPFRKYKRVDEVDHTNKRYSVIEGPIGDTLEKISNE
IKIVATPDGGSILKISNKHHTKGDEHVAEQYKAKSEKMETILLRAVESYLLAHSDAYN
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BASE COUNT 149 a 109 c 120 g 105 t

ORIGIN

Query Match 98.7%; Score 473.6; DB 8; Length 483;
Best Local Similarity 99.2%; Pred. No. 1.4e-124;
Matches 476; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 1 ggtgtgttattatagactgagaccactctgtatcccaagcagctgactgttcaag 60
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Db 4 GGTGTATTATTAATGATGAGCTGAGACCACTCTGTTATCCACAGCTCGACTGTTCAAG 63
QY 61 gacctatcccttgatgagcgaatacctcttccaaaggtgacccccaagccattagcagt 120
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Db 64 GCCTTATCCTTGATGCGCATATCTCTTCCAAAGGTTGACCCCAAGCATTTAGCAGT 123
QY 121 gttgaacaacatgaagaaatgagggccttgagacattagaagatcagcttccgaa 180
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Db 124 GTTGAANAACATGTAAGAAATGAGAGGCGCTGGAACCATTAAGAAATCAGCTTCCCGAA 183
QY 181 ggcctcccttcaagtaagcgtgaaagcagaagttgaggtgaggtgagccacaacattcaaa 240
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Db 184 GGCCTCCCTTCAAGTACGTAAGAGACAGAGTTGATGAGTGACACACAAACTTCAAA 243
QY 241 tacaattacagcgtgacgagggcggtcccatagagcagacattgagaaagatcccaac 300
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Db 244 TACAATTACAGCGGTGATCGAGGGCGGTCCCATAGGCGACACATTTGAGAAATCTCCAA 303
QY 301 gagataaagatagtgacaacccctgatgagagatccatcttgaagatcagcaacaagttac 360
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Db 304 GAGATTAAGATAGTGGCAACCCCTGATGAGATCCATCTTGAAGATCAGCAACAAGTAC 363
QY 361 cacacaaaggtgacatgaggtgaaagcagagcaggttaagcagaatgaagggc 420
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Db 364 CACACCAAGGTACCATGAGGTGAAGCGACAGCATTAAGCAAGTAAAGAAATGCCG 423
QY 421 gagacactttgagggcggttgagagctaccttggcacacccgagtcgactcaactaa 480
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Db 424 GAGACACTTTTGAGGGCGCTTGAGAGCTACCTCTTGCGACACTCCGATGCCCTACAACTAA 483

RESULT 3
LOCUS 177098 672 bp DNA
DEFINITION Sequence 21 from patent US 5693495. PAT 03-APR-1998
ACCESSION I77098
VERSION I77098.1 GI:3013252
KEYWORDS
SOURCE Unknown.
ORGANISM Unknown.
REFERENCE
1 (bases 1 to 672)
Breiteneder,H., Valenta,R., Breitenbach,M., Kraft,D., Rumpold,H.
and Scheiner,O.
Allergens of alder pollen and applications thereof
Patent: US 5693495-A 21 02-DEC-1997;
Location/Qualifiers
1..672
/organism="unknown"
BASE COUNT 218 a 130 c 158 g 166 t
ORIGIN

Query Match. 98.0%; Score 470.4; DB 5; Length 672;
Best Local Similarity 98.8%; Pred. No. 1.2e-123;
Matches 474; Conservative 0; Mismatches 6; Indels 0; Gaps 0;

QY 1 ggtgtgttattatagactgagaccactctgtatcccaagcagctgactgttcaag 60
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Db 4 GGTGTATTATTAATGATGAGCTGAGACCACTCTGTTATCCACAGCTCGACTGTTCAAG 63
QY 61 gacctatcccttgatgagcgaatacctcttccaaaggtgacccccaagccattagcagt 120
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Db 64 GCCTTATCCTTGATGCGCATATCTCTTCCAAAGGTTGACCCCAAGCATTTAGCAGT 123
QY 121 gttgaacaacatgaagaaatgagggccttgagacattagaagatcagcttccgaa 180
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Db 124 GTTGAANAACATGTAAGAAATGAGAGGCGCTGGAACCATTAAGAAATCAGCTTCCCGAA 183
QY 181 ggcctcccttcaagtaagcgtgaaagcagaagttgaggtgaggtgagccacaacattcaaa 240
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Db 184 GGCCTCCCTTCAAGTACGTAAGAGACAGAGTTGATGAGTGACACACAAACTTCAAA 243
QY 241 tacaattacagcgtgacgagggcggtcccatagagcagacattgagaaagatcccaac 300
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Db 244 TACAATTACAGCGGTGATCGAGGGCGGTCCCATAGGCGACACATTTGAGAAATCTCCAA 303
QY 301 gagataaagatagtgacaacccctgatgagagatccatcttgaagatcagcaacaagttac 360
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Db 304 GAGATTAAGATAGTGGCAACCCCTGATGAGATCCATCTTGAAGATCAGCAACAAGTAC 363
QY 361 cacacaaaggtgacatgaggtgaaagcagagcaggttaagcagaatgaagggc 420
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Db 364 CACACCAAGGTACCATGAGGTGAAGCGACAGCATTAAGCAAGTAAAGAAATGCCG 423
QY 421 gagacactttgagggcggttgagagctaccttggcacacccgagtcgactcaactaa 480
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Db 424 GAGACACTTTTGAGGGCGCTTGAGAGCTACCTCTTGCGACACTCCGATGCCCTACAACTAA 483

RESULT 4
LOCUS BVBETV1 691 bp mRNA
DEFINITION Birch mRNA for pollen allergen Betv1. PLN 12-SEP-1993
ACCESSION X15877
VERSION X15877.1 GI:17937
KEYWORDS Betv1 gene; pollen allergen.
SOURCE European white birch.
ORGANISM Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
Rosidae; Fagales; Betulaceae; Betula.
REFERENCE
1 (bases 1 to 691)
Breiteneder,H., Pettenburger,K., Bito,A., Valenta,R., Kraft,D.,
Rumpold,H., Scheiner,O. and Breitenbach,M.
The gene coding for the major birch pollen allergen Betv1, is
highly homologous to a pea disease resistance response gene
EMBO J. 8 (7), 1935-1938 (1989)
90005395
Data kindly reviewed (01-MAY-1990) by Breitenbach M.
Location/Qualifiers
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/db_xref="taxon:3505"
/tissue_type="pollen"
/clone_lib="lambda gt11"
49..531
/note="Betv1 allergen (AA 1-160)"
/codon_start=1
/protein_id="CAA33887.1"
/db_xref="GI:17938"
/db_xref="SWISS-PROT:P15494"
/translation="MGVFNVEETTSVIAARLFKAFLIDGNLPPKVAPOAIISSVEN
TEGNGPGTIKISPEGPFRKYKRVDEVDHTNKRYSVIEGPIGDTLEKISNE
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CDS

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                  /note="pot. polyA signal"
polyA_site        691
BASE COUNT       204 a 143 c 161 g 183 t
ORIGIN

Query Match      98.0%; Score 470.4; DB 8; Length 691;
Best Local Similarity 98.8%; Pred. NO.1.2e-123;
Matches 4/4; Conservative 0; Mismatches 6; Indels 0; Gaps 0;

QY 1 ggtgtttaataatgagactgagacaccactctgtatcccaagagctgcagtccaag 60
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DB 52 GGTGTTTCAATTACGAACATGAGACACCACTCTTTATCCAGACAGCTCCAGCTTTCAAG 111
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
QY 61 gccctatccctgtagtgagataacctcttccaaaggctgcaccccaagccattagcagt 120
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 112 GCCTTATCCTTGATGGCGATTAATCTTTCCAAAGGTTGCACCCCAAGCATTAAGCAGT 171
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QY 121 gttgaacaacttgaagaaatgtagggcctggaaccattagaagatcagcttccgaa 180
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DB 172 GTTGAAGAACATTGAAGAAATGAGGGCTGGAACCATTAAGAAATCAGCTTCCGAA 231
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QY 181 ggcctcccttcaagtagcgtgaagagacagtgataggtgagacacacaaactcaaa 240
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 232 GGGTCCCTTTCAAGTACGTGAAGAGACAGATGATAGGTGAGCCACACAACTTTCAA 291
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
QY 241 tacaattacagcgtgtagcagggcgtgccatagagcgacacattgagaatctccaac 300
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DB 292 TACAATTACAGCGCTGATCGAGGGCGGTCCATFAGGCGACACATFAGAGATCTCCAA 351
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QY 301 gggataaagatagtagcaacccttgatggagatccattcttgaagatcagcaaaagtac 360
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 352 GAGATTAAGATTAAGTGGCAACCCCTGATGAGAGATCCATTTGAAGATCAGCAACAACTAC 411
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QY 361 cacacaaaggtagcacatgtagtgaagcgagacaggttaagcaagttaagaatgggc 420
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DB 412 CACACCAAGGTGACCATGAGTGGAAGCGACAGCAGTTAAAGCAATAAGAAATGGGC 471
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QY 421 gagacacctttagggcgcttgagagctacctcttgacacatccgactgactaacaa 480
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 472 GAGACACTTTTGAAGGGCGCTTGAGAGCTACTCTTGACACACTCCGATGCTACAACTAA 531
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RESULT 5
BVAFJ2107      483 bp      mRNA      PLN      07-JAN-2000
LOCUS          Betula verrucosa mRNA for major pollen allergen Bet v 1 (Bet v 1
DEFINITION     at12).
ACCESSION     AJ002107
VERSION       AJ002107.1 GI:2564221
KEYWORDS      Betv1 gene; pollen allergen.
SOURCE        European white birch.
ORGANISM      Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core
eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
1 (bases 1 to 483)
Friedl-Hajek, R., Radauer, C., O'Riordan, G.,
Hofmann-Sommergruber, K., Leberl, K., Scheiner, O. and Brelteneeder, H.
New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen
Mol. Immunol. 36 (10), 639-645 (1999)

JOURNAL        MEDLINE
REFERENCE      99437514
AUTHORS        2 (bases 1 to 483)
TITLE          Friedl-Hajek, R.
JOURNAL        Submitted (17-OCT-1997) Friedl-Hajek R., Institute of General and
Experimental Pathology, University of Vienna, Wehringer Guertel
18-20, A-1090 Vienna, AUSTRIA
FEATURES       Location/Qualifiers
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                 /clone="at12"
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                 /dev_stage="mature"
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                 /note="isoform at12"
                 /product="pollen allergen Betv1"
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                 /db_xref="GI:2564222"
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                 /translation="MGVFNVEETETTSVLPARLFAFLFDGDNLPKYPAPAISSVEN
                 IISNGPGTIRKISPEEGFPKRVDRDEVDHTNFKYNSVTEGGPMGDTLEKISNE
                 IKIVAPPDGSLILKISNKHVTKGDHEVKAQVAKSEMGETLLRAVESYLLHSDAVN
                 "

BASE COUNT      148 a 110 c 121 g 104 t
ORIGIN

Query Match      97.7%; Score 468.8; DB 8; Length 483;
Best Local Similarity 98.5%; Pred. NO.3.3e-123;
Matches 4/3; Conservative 0; Mismatches 7; Indels 0; Gaps 0;

QY 1 ggtgtttaataatgagactgagacaccactctgtatcccaagagctgcagtccaag 60
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DB 4 GGTGTTTCAATTACGAACATGAGACACCACTCTTTATCCAGACAGCTCCAGCTTTCAAG 63
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QY 61 gccctatccctgtagtgagataacctcttccaaaggctgcaccccaagccattagcagt 120
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 64 GCCTTATCCTTGATGGCGATTAATCTTTCCAAAGGTTGCACCCCAAGCATTAAGCAGT 123
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
QY 121 gttgaacaacttgaagaaatgtagggcctggaaccattagaagatcagcttccgaa 180
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DB 124 GTTGAAGAACATTGAAGAAATGAGGGCTGGAACCATTAAGAAATCAGCTTCCGAA 183
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QY 181 ggcctcccttcaagtagcgtgaagagacaggttgatgaggttgagacacaaactcaaa 240
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DB 184 GCGTCCCTTTCAAGTACGTGAAGAGACAGATGATGAGGTGAGCCACCAAACTTCAA 243
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QY 241 tacaattacagcgtgtagcagggcgtgccatagagcgacacattgagaatctccaac 300
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DB 244 TACAATTACAGCGCTGATCGAGGGCGGTCCATGAGGACACATTTGAAGATCTCCAA 303
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QY 301 gagataaagatagtagcaacccttgatggagatccattcttgaagatcagcaaaagtac 360
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DB 304 GAGATTAAGATTAAGTGGCAACCCCTGATGAGAGATCCATTTGAAGATCAGCAACAACTAC 363
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QY 361 cacacaaaggtagcacatgtagtgaagcgagacaggttaagcaagttaagaatgggc 420
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DB 364 CACACCAAGGTGACCATGAGTGGAAGCGACAGCAGTTAAAGCAATAAGAAATGGGC 423
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QY 421 gagacacctttagggcgcttgagagctacctcttgacacatccgactgactaacaa 480
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
DB 424 GAGACACTTTTGAAGGGCGCTTGAGAGCTACTCTTGACACACTCCGATGCTACAACTAA 483
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RESULT 6
BVGC11         483 bp      DNA      PLN      08-MAY-1998
LOCUS          B.verrucosa gene for major allergen Bet v 1 (clone BVGC11).
DEFINITION     272429
ACCESSION     Z72429.1 GI:1321711
VERSION       272429.1 GI:1321711
KEYWORDS      major allergen.
SOURCE        European white birch.
ORGANISM      Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
Rosidae; Fagales; Betulaceae; Betula.
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REFERENCE	AUTHORS	TITLE	JOURNAL
1 (bases 1 to 483)	Hoffmann-Sommergruber, K.	Direct Submission	Submitted (29-APR-1996)
2 (bases 1 to 483)	Hoffmann-Sommergruber, K., Vanek-Krebitz, M., Rodauer, C., Wen, J., Ferrelle, F., Scheiner, O., and Bretlender, H.	Genomic characterization of members of the Bet v 1 family: genes coding for allergens and pathogenesis-related proteins share intron positions	Gene 197 (1-2), 91-100 (1997)
FEATURES	FEATURES	FEATURES	FEATURES
source	Location/Qualifiers	Location/Qualifiers	Location/Qualifiers
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	/tissue_type="leaves"	/tissue_type="leaves"	/tissue_type="leaves"
	1..483	1..483	1..483
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BASE COUNT	BASE COUNT	BASE COUNT	BASE COUNT
148 a	110 c	121 g	104 t
ORIGIN	ORIGIN	ORIGIN	ORIGIN
Query Match	97.7%: Score 468.8; DB: 8; Length 483;	97.7%: Score 468.8; DB: 8; Length 483;	97.7%: Score 468.8; DB: 8; Length 483;
Best Local Similarity	98.5%: Pred. No. 3.3e-123;	98.5%: Pred. No. 3.3e-123;	98.5%: Pred. No. 3.3e-123;
Matches 473; Conservative	0; Mismatches 7; Indels 0; Gaps 0;	0; Mismatches 7; Indels 0; Gaps 0;	0; Mismatches 7; Indels 0; Gaps 0;
0y	1 ggtgtttaaataaagaactagagacaacactgttataccagcagctcgactgttcaag	1 ggtgtttaaataaagaactagagacaacactgttataccagcagctcgactgttcaag	1 ggtgtttaaataaagaactagagacaacactgttataccagcagctcgactgttcaag
Db	4 GGTGTTTCANTACGAACATGAGCCACACTGTATTCCAGCAGCTCGACTGTTCAAG	4 GGTGTTTCANTACGAACATGAGCCACACTGTATTCCAGCAGCTCGACTGTTCAAG	4 GGTGTTTCANTACGAACATGAGCCACACTGTATTCCAGCAGCTCGACTGTTCAAG
0y	61 gcccttatccctgatgagcgaataacctcttcocaaagttgcaaccccaagcattagcagt	61 gcccttatccctgatgagcgaataacctcttcocaaagttgcaaccccaagcattagcagt	61 gcccttatccctgatgagcgaataacctcttcocaaagttgcaaccccaagcattagcagt
Db	64 GCCTTATCTTGATGAGCGATATCTCTTCCAAAGTTGCACCCCAAGCCATTAGCAGT	64 GCCTTATCTTGATGAGCGATATCTCTTCCAAAGTTGCACCCCAAGCCATTAGCAGT	64 GCCTTATCTTGATGAGCGATATCTCTTCCAAAGTTGCACCCCAAGCCATTAGCAGT
0y	121 gttgnaaacattggaagaaatgagagcgctcgtaaacattagaagataagctttccgaa	121 gttgnaaacattggaagaaatgagagcgctcgtaaacattagaagataagctttccgaa	121 gttgnaaacattggaagaaatgagagcgctcgtaaacattagaagataagctttccgaa
Db	124 GTTGAACACATTGAAAGAAATGAGAGGCGCTGGAACCATTAAGAAATCAGCTTCCGAA	124 GTTGAACACATTGAAAGAAATGAGAGGCGCTGGAACCATTAAGAAATCAGCTTCCGAA	124 GTTGAACACATTGAAAGAAATGAGAGGCGCTGGAACCATTAAGAAATCAGCTTCCGAA
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Db	184 GGCCTCCCTTCAAGTACGTGAAGACACAGATGATGAGGTGAGCCACACAACTTCAA	184 GGCCTCCCTTCAAGTACGTGAAGACACAGATGATGAGGTGAGCCACACAACTTCAA	184 GGCCTCCCTTCAAGTACGTGAAGACACAGATGATGAGGTGAGCCACACAACTTCAA
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Db	244 TACATTATACAGCGTATGAGAGCGGCTCCATAGCGCACATTTGAGAAATCTCCAAC	244 TACATTATACAGCGTATGAGAGCGGCTCCATAGCGCACATTTGAGAAATCTCCAAC	244 TACATTATACAGCGTATGAGAGCGGCTCCATAGCGCACATTTGAGAAATCTCCAAC
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Db	424 GAGACATTTTGAAGGCGGTGAGAGCTTCTTGACACACTCGATGCTACAACTAA	424 GAGACATTTTGAAGGCGGTGAGAGCTTCTTGACACACTCGATGCTACAACTAA	424 GAGACATTTTGAAGGCGGTGAGAGCTTCTTGACACACTCGATGCTACAACTAA

LOCUS	BVGC31	483 bp	DNA	PLN	08-MAY-1998
DEFINITION	B.verrucosa gene for major allergen Bet v 1 (clone BVGC31).				
ACCESSION	Z72432				
VERSION	272432.1 GI:1321719				
KEYWORDS	major allergen.				
SOURCE	European white birch.				
ORGANISM	Betula pendula				
REFERENCE	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Euphyllipotes; Spermatophyta; Magnoliophyta; eudicotyledons; Rosidae; Fagales; Betulaceae; Betula.				
AUTHORS	1 (bases 1 to 483)				
TITLE	Hoffmann-Sommergruber,K.				
JOURNAL	Direct Submission				
FEATURES	Submitted (29-APR-1996) Hoffmann-Sommergruber K., University of Vienna, Vienna, Austria, Gen. & Exp. Pathology, Waehringer Guertel 18-20, Vienna, Austria, A-1090				
BASE COUNT	2 (bases 1 to 483)				
ORIGIN	Hoffmann-Sommergruber,K., Vanek-Krebitz,M., Radauer,C., Wen,J., Ferreira,F., Scheiner,O. and Bretleneder,H.				
FEATURES	Genomic characterization of members of the Bet v 1 family: genes coding for allergens and pathogenesis-related proteins share intron positions				
FEATURES	Gene 197 (1-2), 91-100 (1997)				
FEATURES	97473499				
FEATURES	Location/Qualifiers				
FEATURES	1..483				
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FEATURES	/clone="BVGC31"				
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FEATURES	1..483				
FEATURES	/codon_start=1				
FEATURES	/product="major allergen Bet v 1"				
FEATURES	/protein_id="CA96541.1"				
FEATURES	/db_xref="GI:1321720"				
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FEATURES	/translation="MGVFNTEATSYVIPAARLFKAFILDGNDLPPVAPQALSSVENIEGNGGTIKIKISFEPGEPPKPVKRDVEDVDNFKYNSVIEGGIGPTLEKISNEIKIATPDDGSLIKISMKYHKGDPHEVKADEGVKSKEMGTEILRAVBSYLLAHSDAINT"				
BASE COUNT	148 a	110 c	121 g	104 t	
ORIGIN					
Query Match	97.7%: Score 468.8; DB: 8; Length 483;				
Best Local Similarity	98.5%: Pred. NO. 3.3e-123;				
Matches	473; Conservative	0; Mismatches	7; Indels	0; Gaps	0;
QY	1 ggtgtttaaattatgaagactgagacacacctgttaccacagacgctcgactgttcaag 60				
DB	4 GGTGTTTCAATTGAGAACTGAGGCCACCTCTGTATCCGACGCTCGACTTTCAAG 63				
QY	61 gccattatcccttgatgcgataaactctttccaaagttgcaocccaagccattagaagt 120				
DB	64 GCCTTATCTTGAGAGGCGATATCTCTTCCAAAGGTTGCAACCCCAAGCCATTGACAGT 123				
QY	121 gttgaaaacatttgagaagaatggaagggcctgtaaacattagaagaatcagtttccgaa 180				
DB	124 GTTGAAACAATTGAGAGGAATGAGAGGCGCTGGAACCAATTAGAAAGATCAGCTTCCGAA 183				
QY	181 ggcctcccttcaaagtaagtgaaagacagagttgattgagtgtagacacacaaacttcaa 240				
DB	184 GGCCTCCCTTCAAGTACGTGAGAGACAGAGTGTATGAGTGGACACACAAACTTCAA 243				
QY	241 tacaattcaagcgtgattcgagggcggtcccatagggcgacacatttggagaagaattccaac 300				
DB	244 TACAAATTACAGGTGATGAGAGGCGGTCCATAGCGCACACATTGAGAAAGATCTCCAAC 303				
QY	301 gagataaagatagtggaacccctgtagtggaagatccattctggaagatcaggaacaagtac 360				
DB	304 GAGTAAAGATAGTGGCAACCCCTGATGAGAGATTCATCTTGAAGATTCAGCAACAGTAC 363				
QY	361 cacaccaaagttgacatgagagtgaaagcagaagcaggttlaaggagaagttaaagaatggc 420				

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Db 364 CACACCAAGGTGACCATGAGTGAAGGAGAGAGGAGGAGTAAAGCAAGTAAAGAAATGGGC 423
Qy 421 gagacacttttgagggcgcttgagagagctacctcttgacacactcgcagtcactaa 480
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Db 424 GAGACACTTTTGAGGGCGCTTGAGAGCTACTCTTGACACACTCGATGCTTACACTAA 483
RESULT 8
BV280098
LOCUS BV280098 483 bp mRNA PIN 12-SEP-1996
DEFINITION B.verrucosa mRNA for pollen allergen Betv1 (clone 224).
ACCESSION 280098
VERSION 280098.1 GI:1542856
KEYWORDS Betv1: pollen allergen.
SOURCE European white birch.
ORGANISM Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
Rosidae; Fagales; Betulaceae; Betula.
REFERENCE 1 (bases 1 to 483)
AUTHORS Larsen, J.N.
TITLE PCR based cloning and sequencing of isoforms encoding the tree
pollen major allergen Bet v 1 from Betula verrucosa, white birch
JOURNAL 2 (bases 1 to 483)
AUTHORS Larsen, J.N.
TITLE Direct Submission
JOURNAL Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
Alle 10-12, Hørsholm, DK-2970, Denmark
FEATURES
source location/Qualifiers
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/organism="Betula pendula"
/db_xref="taxon:3505"
/flusue_type="pollen obtained from Allergen, Sweden"
/clone="224"
/note="obtained by PCR using cDNA as template"
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/product="pollen allergen Bet v 1"
/protein_id="CA02153.1"
/db_xref="GI:1542857"
/db_xref="SWISS-PROT:P15494"
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BASE COUNT 148 a 110 c 121 g 104 t
ORIGIN
Query Match 97.7%; Score 468.8; DB 8; Length 483;
Best Local Similarity 98.5%; Pred. No. 3.3e-123;
Matches 473; Conservative 0; Mismatches 7; Indels 0; Gaps 0;
Qy 1 ggtgtttaaataatagagctgagacacactctgtatcccaagagctgacttcaag 60
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Db 4 GGTGTTTCAATTACGAACCTGAGACCACCTCTGTTATCCAGGGGTGCACTTTTAAAG 63
Qy 61 gacctatccttgatgagcagatacctcttccaaaggtgaccccaagcattagcagt 120
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Db 64 GCCTTATCTGATGGCGATATCTCTTCCAAAGGTTGACCCCAAGCATATAGAGT 123
Qy 121 gttgaacaacatgaaagaaatgagggcctggaacattagaagaatcagcttccgaa 180
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Db 124 GTTGAACAACTTGAAAGAAATGAGGGCGCTGGAACCATTAAGAAAGATCACTTTCCGAA 183
Qy 181 ggcctcccttaagtaagctgaaagcagaagctgagagtgagtgagacacaaactcaaa 240
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Db 184 GCGTTCCCTTTCAAGTACGTGAAGAGACAGATGATGAGGTGAGCCACCAAACTTCAAA 243
Qy 241 tacaattacagcgctgagcagagcggtcccatagagcagacattgaggaagatctcaac 300
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Db 244 TACATTACAGCGTGATGAGGGCGGTCCCATAGGAGACACATTTGAGAGATCTCCAAC 303
Qy 301 gagataaagtaatgaggaacccctgatatgagagatccatcttgtaagtatcgacaagtac 360
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Db 304 GAGATTAAGATGAGTGGACACCCCTGATGAGAGATCCATCTTGAAGATACACCAAGTAC 363
Qy 361 cacaccaaagtgagccttgagtgaaagcagagcagaagttaaagcaagtaagaatgggc 420
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Db 364 CACACCAAGGTGACCATGAGTGAAGGAGAGAGAGAGAGGAGTTAAGCAAGTAAAGAAATGGGC 423
Qy 421 gagacacttttgagggcgcttgagagagctacctcttgacacactcgcagtcactaa 480
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Db 424 GAGACACTTTTGAGGGCGCTTGAGAGCTACTCTTGACACACTCGATGCTTACACTAA 483
RESULT 9
I77099
LOCUS I77099 480 bp DNA PAT 03-APR-1998
DEFINITION Sequence 22 from patent US 5693495.
ACCESSION I77099
VERSION I77099.1 GI:3013253
KEYWORDS
SOURCE Unknown.
ORGANISM Unknown.
REFERENCE 1 (bases 1 to 480)
AUTHORS Breitenbach, H., Valenta, R., Breitenbach, M., Kraft, D., Rumpold, H.
TITLE Allergens of alder pollen and applications thereof
JOURNAL Patent: US 5693495-A 22 02-DEC-1997;
FEATURES location/Qualifiers
source 1..480
/organism="unknown"
BASE COUNT 147 a 110 c 120 g 103 t
ORIGIN
Query Match 97.4%; Score 467.4; DB 5; Length 480;
Best Local Similarity 98.7%; Pred. No. 8.2e-123;
Matches 471; Conservative 0; Mismatches 6; Indels 0; Gaps 0;
Qy 1 ggtgtttaaataatagagctgagacacactctgtatcccaagagctgacttcaag 60
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Db 4 GGTGTTTCAATTACGAACCTGAGACCACCTCTGTTATCCAGGGGTGCACTTTTAAAG 63
Qy 61 gacctatccttgatgagcagatacctcttccaaaggtgaccccaagcattagcagt 120
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Db 64 GCCTTATCTGATGGCGATATCTCTTCCAAAGGTTGACCCCAAGCATATAGAGT 123
Qy 121 gttgaacaacatgaaagaaatgagggcctggaacattagaagaatcagcttccgaa 180
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Db 124 GTTGAACAACTTGAAAGAAATGAGGGCGCTGGAACCATTAAGAAAGATCACTTTCCGAA 183
Qy 181 ggcctcccttaagtaagctgaaagcagaagctgagagtgagtgagacacaaactcaaa 240
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Db 184 GCGTTCCCTTTCAAGTACGTGAAGAGACAGATGATGAGGTGAGCCACCAAACTTCAAA 243
Qy 241 tacaattacagcgctgagcagagcggtcccatagagcagacattgaggaagatctcaac 300
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Db 244 TACATTACAGCGTGATGAGGGCGGTCCCATAGGAGACACATTTGAGAGATCTCCAAC 303
Qy 301 gagataaagtaatgaggaacccctgatatgagagatccatcttgaaagtaagcaagaatgac 360
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Db 304 GAGATTAAGATGAGTGGACACCCCTGATGAGAGATCCATCTTGAAGATACACCAAGTAC 363
Qy 361 cacaccaaagtgagccttgagtgaaagcagagcagaagcttaagcaagtaagaatgggc 420
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Db 364 CACACCAAGGTGACCATGAGTGAAGGAGAGAGAGAGAGAGGAGTTAAGCAAGTAAAGAAATGGGC 423
Qy 421 gagacacttttgagggcgcttgagagagctacctcttgacacactcgcagtcactaa 477
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Db 424 GAGACACTTTTGAGGGCGCTTGAGAGCTACTCTTGACACACTCGATGCTTACACTAA 480

RESULT	10
LOCUS	BVAJ2108
DEFINITION	BVAJ2108 483 bp mRNA PLN 07-JAN-2000
ACCESSION	AJ002108
VERSION	AJ002108.1 GI:2564223
KEYWORDS	Betv1 gene; pollen allergen.
SOURCE	European white birch.
ORGANISM	Betula pendula
REFERENCE	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; eumhyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
AUTHORS	1 (bases 1 to 483)
TITLE	Friedl-Hajek R., Kadauer C., O'Riordan G., Hoffmann-Sommergruber R., Leberl K., Scheiner O. and Breiteneder H. New Bet v 1 isoforms including a naturally occurring truncated form of the protein derived from Austrian birch pollen
JOURNAL	Mol. Immunol. 36 (10), 639-645 (1999)
MEMLINE	99437514
REFERENCE	2 (bases 1 to 483)
AUTHORS	Friedl-Hajek R.
TITLE	Direct Submission
JOURNAL	Submitted (17-OCT-1997) Friedl-Hajek R., Institute of General and Experimental Pathology, University of Vienna, Waehringer Guertel 18-20, A-1090 Vienna, AUSTRIA
FEATURES	Location/Qualifiers
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gene	1..483
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CDS	1..483
	/note="isoform at15"
	/codon_start=1
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	/protein_id="CAA05188.1"
	/db_xref="GI:2564224"
	/db_xref="SPRMBL:023752"
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BASE COUNT	148 a 110 c 122 g 103 t
ORIGIN	
Query Match	97.3%; Score 467.2; DB 8; Length 483;
Best Local Similarity	98.3%; Pred. No. 9.3e-123;
Matches 472:	Conservative 0; Mismatches 8; Indels 0; Gaps 0;
Oy	1 ggtggttaattaatgaacatgagaacaccctcgttatcccaagagctcgagtftaaag 60
Dd	4 gggttttcattatgcgaactgagacacctctgttatcccaaggcggctgactgtccaag 63
Oy	61 gccctatcccttgatcgagataaacctcttccaaaaggttcaccccagaacattagcaqt 120
Dd	64 gcccttatcttgatgtagagggcatatctggtccaaaagttgcacccccaaaccttaagcagt 123
Oy	121 gttaaacaatgaaagaatatggaagggcctcygaaccattaaagaagatcagcttccogaa 180
Dd	124 gttgaaaaacattgaaagaaatggaaggccctggaaccatttaagaagatcacgctttcccgaa 183
Oy	181 gggccccccttcaaagtacgttaagaagacagagttatagaggtggaaccaacaacttcaaa 240
Dd	184 ggcttccctttccaagctacgctaagaacacagattgtgatggagtgacacacacnaaactttcaaa 243
Oy	241 taacaattacacgtgatcgaaggcggltcccaatagcgacacatttggagaagaatgccaac 300

Db	244	TCAATTAAGCGGTATGAGGGCGGCTCCATTAGGCGACATTGGAGAAATCTCCAAC	303
QY	301	ggagataaagatctgtggcaacccctgtatgtgaagatccatcttgaagaatcagcaagaatc	360
Db	304	GAGATTAAGATAGTGCAACCCCTGATGAGGATCCATCTTGAAGATCAGCAACAGTAC	363
QY	361	ccaccaaagctgacatcatgagtgagagcaagagaggttaagaagaatgaagaatgggc	420
Db	364	CACACCAAGGTGACCATATGATGTAAAGCAGACAGGTTAAAGCAAGTAAGAAATGGGC	423
QY	421	gagacactttagaggccgttgaagactactcttgcacactcgaatgcctacaactaa	480
Db	424	GAGACACTTTTGAAGGCGCTTGAGAGCTACCTCTTGCGACACTCGATGCTTACAATA	483
RESULT 11			
LOCUS	BVZ80099	483 bp	PLN
DEFINITION	B.verrucosa mRNA for pollen allergen Betv1 (clone 2230).		
ACCESSION	280099		
VERSION	280099.1	GI:1542858	
KEYWORDS	Betv1; pollen allergen.		
SOURCE	European white birch.		
ORGANISM	Betula pendula		
REFERENCE	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; eudicotyledons; Rosidae; Fagales; Betulaceae; Betula.		
AUTHORS	Larsen, J.N.		
TITLE	PCR based cloning and sequencing of isogenes encoding the tree pollen major allergen Bet v 1 from Betula verrucosa, white birch unpublished		
JOURNAL	2 (bases 1 to 483)		
REFERENCE	Larsen, J.N.		
AUTHORS	Direct Submission		
TITLE	Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge Alle 10-12, Hørsholm, DK-2970, Denmark		
JOURNAL	Location/Qualifiers		
FEATURES	1..483		
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BASE COUNT	148 a	111 c	121 g
ORIGIN	103 t		
Query Match	97.3%;	Score 467.2;	DB 8;
Best Local Similarity	98.3%;	Pred. No. 9.3e-123;	
Matches	472;	Conservative 0;	Mismatches 8;
		Indels 0;	Gaps 0;
QY	1	ggtgtgttaattatgagacttgagacacacctctgtatccacagcagctgcagctgttcaag	60
Db	4	GGTGTTTCAACTACGAACCTGAGACCCACTCTGTTATCCACGCGGCTCGACTGTCAAG	63
QY	61	gacctatccttgagaggagataactctttccaagaagttgaccccaagccataagaag	120
Db	64	GCGTTTATCTTGATGGGATTAATCTCTTTCCAAAGGTTGACACCCCAAGCATTAAGCAGT	123
QY	121	gttgaaaacatttgaagaaatcgagggcgcttgaaccatttaagaagatcagcttccgaa	180

Db	124	GTGAAAACATTGAAAGGAATGTGAGGGCGCTGGAAACCATTTAAGAAAGTCAAGTTTCCCGAA	183
OY	181	ggcctcccttcaagtaegtgaagacagagtgatlgatgaagtgagaccacaacatcta	240
Db	184	GGCTTCCTCCCTTTCAAGTACCTGAAAGGACAAAGTTGAAGAGGTGGACCCACAAACTTCAAA	243
OY	241	tacaattacagcgtgtatcgtagggcggtgcccatagagcagacatttgagaagaattccaac	300
Db	244	TTCATTTCAGGGGTATTCGAGGGCGGTCCCATATGGCGACACTTGGAGAAGTCTCCAAC	303
OY	301	gagataaagatgtgtgcaaacctctgtatgagaatccatcttgaagatcagcaacaagta	360
Db	304	GAGATTAATAATGTGTGCAACCCCTGTGAGAGATCCATTTGAAAGTTCAGCAACAAGTAC	363
OY	361	ccacacaaagtgagccatagtgtaagcagagcgagtttaagcagaataaagaatgggc	420
Db	364	CACACCAAAAGTGACCATATGAGGTGAAGGACAGACAGCTTAAAGGCAAGTAAAGAAATGGGC	423
OY	421	gagaaacatttgaaggcggtgtgaagctacacctcttggcaacctcgatgecttacaactaa	480
Db	424	GAGAACCTTTTAGGGCCCTTGAAGACTACCTCTTGGCACACTCCGATCCCTPAACAACCTAA	483

RESULT 12

LOCUS	BVA02109	483 bp	mRNA	PLN	07-JAN-2000
DEFINITION	Betula verrucosa mRNA for major pollen allergen Bet v 1 (Bet v 1 at22).				
ACCESSION	AJ002109				
VERSION	AJ002109.1 GI:2564225				
KEYWORDS	Betv1 gene; pollen allergen.				
SOURCE	European white birch.				
ORGANISM	Betula pendula				

REFERENCE

TITLE	JOURNAL	REFERENCE	AUTHORS	TITLE	JOURNAL
Hoffmann-Sommergruber, K., Leberl, K., Scheiner, O. and Brettleeder, H.				New Bet v 1 isoforms including a naturally occurring truncated form of the protein derived from Austrian birch pollen	
Wol. Immunol. 36 (10), 639-645 (1999)					
99437514					
2 (bases 1 to 483)					
Friedl-Hajek, R.					
Direct Submission					
Submitted (17-Oct-1997)					
Friedl-Hajek R., Institute of General and					

FEATURES

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BASE COUNT
ORIGIN

BASE COUNT	148 a	109 c	122 q	104 t
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Best Local Similarity	98.1%;	Pred. No. 2.7e-122;		
Matches 471;	Conservative	0;	Mismatches 9;	Indels 0;
			Gaps	0

[illegible]

RESULT 13

LOCUS	BVE6906	483 bp	mRNA	PLN	07-JUN-2000
DEFINITION	Betula verrucosa mRNA for pollen allergen Betv1, isoform at21.				
ACCESSION	AJ006906				
VERSION	AJ006906.1 GI:4006948				
KEYWORDS	Betv1 gene; pollen allergen.				
SOURCE	European white birch.				

ORGANISM

REFERENCE	AUTHORS	TITLE	JOURNAL
1 (bases 1 to 483)	Friedl-Hajek, R., Radauer, C., O'Riordan, G., Hoffmann-Sommergruber, K., Leberl, K., Scheiner, O. and Bretteneder, H.	New Bet v 1 isoforms including a naturally occurring truncated form of the protein derived from Austrian birch pollen	Mol. Immunol. 36 (10), 639-645 (1999)
		Eukaryota: Viridiplantae: Streptophyta: Embryophyta: Tracheophyta: Euphylliphtes: Spermatophyta: Magnoliophyta: eudicotyledons: core eudicots: Rosidae: eurosids I: Fagales: Betulaceae: Betula.	

AUTHORS

TITLE	Direct Submission
JOURNAL	Submitted (10-JUN-1998) Friedl-Hajek R., Institute of General and

FEATURES

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/db_xref="taxon:3505"
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gene
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CDS

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BASE COUNT      149 a      108 c      121 g      105 t
ORIGIN
Query Match      97.0%: Score 465.6; DB 8; Length 483;
Best Local Similarity 98.1%: Pred. No. 2.7e-122;
Matches 471; Conservative 0; Mismatches 9; Indels 0; Gaps 0;

QY 1 ggtgtgttaattatgagactgagaccactctgtatcccaagactcgactgttaag 60
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Db 4 GGTGTTTCATTTACGAACAGACACACCTCTTTATCCAGCAGCTAGCTTTCAAG 63

QY 61 gctttatccttgatggcgataaccctcttccaaaggtgcaccccaagcattagagt 120
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Db 64 GCGTTATCCTTGATGCGGATTAATCTTTCCAAAGGTTGCACCCCAAGCATTAAGCAGT 123

QY 121 gtgtgaacattgaagaagaatgagggcctggaacattagaagatcagcttccgaa 180
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Db 124 GTTGAATAACATTGAAGGAATAATGAGGGCTTGGAACCATTAAGAAATCAGCTTCCGAA 183

QY 181 ggcctcccttcaagtacgtgaaagacagagttgagtgtgagacacacaacttcaaa 240
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Db 184 GCGTTCCTTTCAAGTACGTGGAAGACAGAGTTGATGAGTGGACACACAACTTCAAA 243

QY 241 tacaattacagcgtgatcgagggcggtcccatagggcacaacattggaagatctccaac 300
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QY 301 gagaataagaatgtgaaacccctgatggagatccatcttgaagaatcagaacaagtac 360
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QY 361 cacaccaaaagtgcacatgaggtgaagcagagcaagttaaagcaagtaagaatgggc 420
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Db 364 CACACCAAAAGTGACCTGAGTGTAAGGACAGAGGTTAAAGCAATTAAGAAATGGGC 423

QY 421 gagacactttgagggcggttgagagctactcttggcacactcgaatgctcaactaa 480
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Db 424 GAGACACTTTTGAGGGCGGTTGAGAGCTACTCTTGGCACACTCCGATGCCCTCAACTAA 483

RESULT 14
LOCUS      BVZ80105      483 bp      mRNA      PLN      12-SEP-1996
DEFINITION B.verrucosa mRNA for pollen allergen Betv1 (clone 2229).
ACCESSION 280105
VERSION    280105.1 GI:1542870
KEYWORDS   Betv1; pollen allergen.
SOURCE     European white birch.
ORGANISM   Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE 1 (bases 1 to 483)
AUTHORS   Larsen J.N.
TITLE     PCR based cloning and sequencing of isoforms encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
JOURNAL    Unpublished
REFERENCE 2 (bases 1 to 483)
AUTHORS   Larsen J.N.
TITLE     Direct Submission
JOURNAL    Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES   Location/Qualifiers
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/db_xref="taxon:3505"
/tissue_type="pollen obtained from Allergon, Sweden"
/clone="2229"
/note="obtained by PCR using cDNA as template"

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1..483
/codon_start=1
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/protein_id="CA802160.1"
/db_xref="GI:1542871"
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/translation="MGVFNTEETTSVIPARLFKAFILIDGNLPPKVAPOAISVEN
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Best Local Similarity 98.1%: Pred. No. 2.7e-122;
Matches 471; Conservative 0; Mismatches 9; Indels 0; Gaps 0;

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QY 61 gctttatccttgatggcgataaccctcttccaaaggtgcaccccaagcattagagt 120
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Db 64 GCGTTCCTTTCAAGTACGTGGAAGACAGAGTTGATGAGTGGACACACAACTTCAAA 123

QY 121 gtgtgaacattgaagaagaatgagggcctggaacattagaagatcagcttccgaa 180
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Db 124 GTTGAATAACATTGAAGGAATAATGAGGGCTTGGAACCATTAAGAAATCAGCTTCCGAA 183

QY 181 ggcctcccttcaagtacgtgaaagacagagttgagtgtgagacacacaacttcaaa 240
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Db 184 GCGTTCCTTTCAAGTACGTGGAAGACAGAGTTGATGAGTGGACACACAACTTCAAA 243

QY 241 tacaattacagcgtgatcgagggcggtcccatagggcacaacattggaagatctccaac 300
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTTGAGAAGATCTCCAA 303

QY 301 gagaataagaatgtgaaacccctgatggagatccatcttgaagaatcagaacaagtac 360
    ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 304 GAGTAAAGATGATGGCAACCCCTGATGAGGATCCATCTTGAAGATTACCAACAAATAC 363

QY 361 cacaccaaaagtgcacatgaggtgaagcagagcaagttaaagcaagtaagaatgggc 420
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Db 364 CACACCAAAAGTGACCTGAGTGTAAGGACAGAGGTTAAAGCAATTAAGAAATGGGC 423

QY 421 gagacactttgagggcggttgagagctactcttggcacactcgaatgctcaactaa 480
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Db 424 GAGACACTTTTGAGGGCGGTTGAGAGCTACTCTTGGCACACTCCGATGCCCTCAACTAA 483

RESULT 15
LOCUS      BVZ80101      483 bp      mRNA      PLN      12-SEP-1996
DEFINITION B.verrucosa mRNA for pollen allergen Betv1 (clone 184).
ACCESSION 280101
VERSION    280101.1 GI:1542862
KEYWORDS   Betv1; pollen allergen.
SOURCE     European white birch.
ORGANISM   Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE 1 (bases 1 to 483)
AUTHORS   Larsen J.N.
TITLE     PCR based cloning and sequencing of isoforms encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
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JOURNAL Unpublished
REFERENCE 2 (bases 1 to 483)
AUTHORS Larsen, J.N.
TITLE Direct Submission
JOURNAL Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
Alle 10-12, Hørsholm, DK-2970, Denmark
Location/Qualifiers
source
1. 483
/organism="Betula pendula"
/db_xref="taxon:3505"
/tissue_type="pollen obtained from Allergon, Sweden"
/clone="184"
/note="obtained by PCR using cDNA as template"
1. 483
/codon_start=-1
/product="pollen allergen Bet v 1"
/protein_id="CA802156.1"
/db_xref="GI:1542863"
/db_xref="SPTREMBL:O96366"
/translation="MGVFNTEETTSVIPARLFKAFILDDNLFPRVAPQAISSVEN
ISNGSGTIRKISPEGPEPKYKDRVDEVDHNFKNYSVIEGPGVDTLEKISNE
IKIVATPDGSIILKISNKYTKDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN
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BASE COUNT 146 a 111 c 122 g 104 t
ORIGIN

Query Match 96.3%; Score 462.4; DB 8; Length 483;
Best Local Similarity 97.7%; Pred. No. 2:2e-121;
Matches 469; Conservative 0; Mismatches 11; Indels 0; Gaps 0;

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DB 4 ggtgttttcaattacgaactgagaccactctgttataccagagctgactgttcaag 63
QY 61 gecttataccttgatggcgataacctcttccaaaggttgcacccgaagccatgaagt 120
DB 64 GCCTTTATCCTTGATGCGGTAATCTCTTCCAAAGGTGTCACCCCAAGCCATTAGCAGT 123
QY 121 gttgaaaacattgaagaaattgagggcctggaaccattgaagaatcagcttccgaa 180
DB 124 GTTGAAAACATGAAAGAAATGAGGGCGCTGGAACCATTTAAGAAATCAGCTTCCGAA 183
QY 181 ggcctcccttcaagtagcgtgaagagacagatgtagtggtagccacacaaacttcaaa 240
DB 184 GCGTTCCCTTTCAAGTACGTGAAGAGACAGAGTTGATGAGTTGACACAAACTTCAAA 243
QY 241 tacaattacagcgtgatggcggtggtcccatagcgacacattggaagaatctccaac 300
DB 244 TACAATTACAGCGTGAATGAGGGCGGTCCCGTGGCGACACATTGGAAGATCTCCAAC 303
QY 301 gagataaagaatgtagcaacccttgatggaagatcgaattggaagaatcagaacaagtac 360
DB 304 GAGATTAAGATAGTGGCAACCCCTGATGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363
QY 361 cacaccaaaaggtacacatgaggtgaagcgagcaggttaagcaagttaagaataatgggc 420
DB 364 CACACCAAAAGCGACCATGAGTGAAGCAGACAGGTAAAGCAAGTAAAGAAATGGGC 423
QY 421 gagacaactttgagggcggttgagagctacctcttgacacatcgcgatgcctacaactaa 480
DB 424 GAGACACTTTTGGAGCGCTTGAGAGCTACCTTGGCACACTCCGATGCCTACAACTAA 483

Search completed: December 11, 2000, 16:14:46
Job time: 21053 sec

GenCore version 4.5
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OM nucleic - nucleic search, using sw model

Run on: December 11, 2000, 10:23:53 ; Search time 26.17 Seconds

(Without alignments)
2774.004 Million cell updates/sec

Title: US-09-270-910-36

Perfect score: 480
Sequence: 1 ggtgtgttaattatgagac.....actccgatgctacaactaa 480

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 262060 seqs, 75620496 residues

Total number of hits satisfying chosen parameters: 524120

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

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Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

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2	467.4	97.4	480	2	US-07-847-010-22
3	374.4	78.0	665	2	US-07-847-010-1
4	371.4	77.4	480	2	US-07-847-010-2
5	353.6	73.7	655	2	US-07-847-010-15
6	350.6	72.0	480	2	US-07-847-010-16
7	348.8	72.7	742	2	US-07-847-010-12
8	345.8	72.0	480	2	US-07-847-010-13
9	345.6	72.0	619	2	US-07-847-010-9
10	344	71.7	860	2	US-07-847-010-18
11	342.6	71.4	480	2	US-07-847-010-10
12	341	71.0	480	2	US-07-847-010-19
13	128	26.7	739	1	US-08-363-010-3
14	126.8	26.4	465	1	US-08-363-010-2
15	87.4	18.2	2290	7	5312912-1
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18	52.6	11.0	7218	1	US-08-232-463-14
19	43.8	9.1	2593	1	US-08-728-956-1
20	38.4	8.0	105	1	US-08-363-010-4
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25	33.8	7.0	2878	1	US-07-903-456-1
26	32.2	6.7	1350	5	US-08-258-287B-41

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	28	30	6.2	2368	4	US-08-520-933-1	Sequence 1, Appl
	29	30	6.2	2368	7	5262177-1	Patent No. 5262177
	30	30	6.2	5057	3	US-08-365-486A-12	Sequence 12, Appl
	31	30	6.2	5108	1	US-07-642-002-1	Sequence 1, Appl
	32	29.6	6.2	426	5	US-09-023-082A-111	Sequence 11, Appl
	33	29.6	6.2	3796	2	US-08-920-812-19	Sequence 19, Appl
	34	29.6	6.2	3796	2	US-08-920-827-19	Sequence 19, Appl
	35	29.6	6.2	3796	2	US-08-921-177-19	Sequence 19, Appl
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	41	29.4	6.1	687	1	US-08-254-493-2	Sequence 2, Appl
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	43	29.4	6.1	1120	1	US-08-254-493-3	Sequence 3, Appl
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ALIGNMENTS

RESULT 1
US-07-847-010-21
; Sequence 21, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Helmo
; APPLICANT: Reikertstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hofmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreltra, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennile & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELETEX: 66141 PENNTE
; INFORMATION FOR SEQ ID NO: 21:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 672 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: CDNA

HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: birch (betula sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN
US-07-847-010-21

Query Match 98.0%; Score 470.4; DB 2; Length 672;
Best Local Similarity 98.8%; Pred. No. 3.2e-143;
Matches 474; Conservative 0; Mismatches 6; Indels 0; Gaps 0;

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DB 424 gagacactttgagggcgttgagagctacctcttgacacactcagatgctcctaactaa 483

RESULT 2

US-07-847-010-22
Sequence 22, Application US/07847010
Patent No. 5693495

GENERAL INFORMATION:

APPLICANT: Breiteneder, Helmo
APPLICANT: Reikertorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hofmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Schelner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESS: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847, 010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ. ID NO: 22:
SEQUENCE CHARACTERISTICS:
LENGTH: 480 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: cDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: birch (Betula sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN
US-07-847-010-22

Query Match 97.4%; Score 467.4; DB 2; Length 480;
Best Local Similarity 98.7%; Pred. No. 2.5e-142;
Matches 471; Conservative 0; Mismatches 6; Indels 0; Gaps 0;

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DB 364 caccacaaagtgacatgagtgagcagagcaggttaagcagaatgagaatgggc 423
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RESULT 3

US-07-847-010-1
Sequence 1, Application US/07847010
Patent No. 5693495
GENERAL INFORMATION:

TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
LENGTH: 480 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: cDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-16

Query Match 73.0%; Score 350.6; DB 2; Length 480;
Best Local Similarity 83.4%; Pred. No. 1.9e-104;
Matches 398; Conservative 0; Mismatches 79; Indels 0; Gaps 0;
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QY 61 gctttatccttgatgagcgaataacctcttccaaaggttgaccccccaagcattagcagt 120
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QY 121 gttgaacaacatgaagaaatgagagcctggaacattgaagaagtcaagctccgaa 180
DB 124 GTTGAAGAAAGCTGAAGAAATGAGGCGCTGGAACCATCAAGAAATACCTTTGGGAA 183
QY 181 ggcctcccttcaagtaacgtgaagacaagattgatgaggtgagcaacacacaacttaaa 240
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DB 364 CAGGCCAAGGTGACCATGAGATTAAATGACAGAGAGATGAAGGTTGCCAAGAAATATGGCC 423

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RESULT 7
US-07-847-010-12
Sequence 12, Application US/07847010
Patent No. 5693495
GENERAL INFORMATION:
APPLICANT: Breiteneder, Helmo
APPLICANT: Reikerstorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 742 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: cDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
US-07-847-010-12
Query Match 72.7%; Score 348.8; DB 2; Length 742;
Best Local Similarity 82.9%; Pred. No. 9.1e-104;
Matches 398; Conservative 0; Mismatches 82; Indels 0; Gaps 0;
QY 1 ggtgtttaataatagagactgagacacactctgtatacccaagcagctgcttaaac 60
DB 4 GGTGTTTCAATTACGAGGTTGAGACTCCCTCGTTATCCCAAGCGCAAGCGTGTCAAG 63
QY 61 gctttatccttgatgagcgaataacctcttccaaaggttgaccccccaagcattagcagt 120

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Db 64 TCCATGTCCTGATGCGCATAGCTATCCCAAGGTCACCTCAAGCTATTACGAGC 123
QY 121 gttgaacaattgaagaaatggaagggccctggaacacttaagaatcagcttccgaa 180
Db 124 GTTGAAGAAGCTTAAGCAAAATGAGGGCTGTGAACCATGAAATATCACCCTTTGGGAA 183
QY 181 ggcctcccttcaagtaagcgaaggaagagattgataggttgagccacacaactcaaa 240
Db 184 GCGAGCGCTTACAAGTACGTGAAGAGAGAGAGGCTGATGAGTTGACACACAACTTCAA 243
QY 241 tacaattacagcgltgcgaagggcggtcccaatagggcagacacattggaagaattccaa 300
Db 244 TATAGCTACACCTGATCGAGGGTGATGCTCGGTGACAAAGCTGGAAGGCTGCGAGC 303
QY 301 gagataaagatagtggaacccctgtatggagatccatcttgaagaatcagcaaaatgac 360
Db 304 GAGCTGAAGTATGTCAGCGCTGCTGTGAGAGATCCATTTGAAGATCAGCAGCAAGTTC 363
QY 361 cacaccaaggtgacacatgagtggaagcagagcaggttaagcaagtaagaagaatgggc 420
Db 364 CACGCCAAAGCGACCATGATGATTAATGCAGAGAGATGAAGGTCGCCAAAGAAATGGCC 423
QY 421 gagacactttgagggcggttgagagctacaccttggcacaactcgaatgcttaacataa 480
Db 424 GAGAACTTTTAAGGCGGTTGAGACCTACTATTGSCACACTCTGCTGATACACTAA 483
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RESULT 8
US-07-847-010-13
Sequence 13, Application US/07847010
Patent No. 5693495

GENERAL INFORMATION:

APPLICANT: Breiteneder, Helmo
APPLICANT: Reikertorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
NUMBER OF INVENTIONS: Applications Thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Penile & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847, 010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
LENGTH: 480 base pairs

TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: cDNA
HYPOTHEetical: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN
US-07-847-010-13

Query Match 72.0%; Score 345.8; DB 2; Length 480;
Best Local Similarity 82.8%; Pred. No. 6,8e-103;
Matches 395; Conservative 0; Mismatches 82; Indels 0; Gaps 0;

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QY 1 ggtgtttaattaatgaactgagaccactctgtatcccaagcagctgactgtcaag 60
Db 4 GGTGTTTCAATTACGAGGTTGAGACTCCCTCGTTATCCACGCGCAAGGCTTCAAG 63
QY 61 gaccttacctgattgagcgaataaccttccaaaggttgaccccaagcattagcagt 120
Db 64 TCCATGTCCTGATGCGCATAGCTATCCCAAGGTCACCTCAAGCTATTACGAGC 123
QY 121 gttgaacaattgaagaaatggaagggccctggaacacttaagaatcagcttccgaa 180
Db 124 GTTGAAGAAGCTTGAAGAAATGAGGGCTGTGAACCATGAAATATCACCCTTTGGGAA 183
QY 181 ggcctcccttcaagtaagcgaaggaagagattgataggttgagccacacaactcaaa 240
Db 184 GCGAGCGCTTACAAGTACGTGAAGAGAGAGAGGCTGATGAGTTGACACACAACTTCAA 243
QY 241 tacaattacagcgltgcgaagggcggtcccaatagggcagacacattggaagaattccaa 300
Db 244 TATAGCTACACCTGATCGAGGGTGATGCTCGGTGACAAAGCTGGAAGGCTGCGAGC 303
QY 301 gagataaagatagtggaacccctgtatggagatccatcttgaagaatcagcaaaatgac 360
Db 304 GAGCTGAAGTATGTCAGCGCTGCTGTGAGAGATCCATTTGAAGATCAGCAGCAAGTTC 363
QY 361 cacaccaaggtgacacatgagtggaagcagagcaggttaagcaagtaagaagaatgggc 420
Db 364 CACGCCAAAGCGACCATGATGATTAATGCAGAGAGATGAAGGTCGCCAAAGAAATGGCC 423
QY 421 gagacactttgagggcggttgagagctacaccttggcacaactcgaatgcttaacataa 477
Db 424 GAGAACTTTTAAGGCGGTTGAGACCTACTATTGSCACACTCTGCTGATACACTAA 480
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RESULT 9
US-07-847-010-9
Sequence 9, Application US/07847010
Patent No. 5693495

GENERAL INFORMATION:

APPLICANT: Breiteneder, Helmo
APPLICANT: Reikertorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
NUMBER OF INVENTIONS: Applications Thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Penile & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York

COUNTRY: U.S.A.
ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847, 010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 619 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN
US-07-847-010-9

Query Match 72.0%; Score 345.6; DB 2; Length 619;
Best Local Similarity 82.5%; Pred. No. 9,1e-103;
Matches 396; Conservative 0; Mismatches 84; Indels 0; Gaps 0;

QY 1 ggtgtgtaataatagagactgagaccactctgtatcccaagcagctgactgttcaag 60
DB 4 GGTGTTTCAATACGAGGTTGAGACTCCCTCGTTATCCCTCGCAAGCGTTTCAAG 63
QY 61 gccttacccttgatgagcgaatacctcttccaaaggtgaccccaagcattagagt 120
DB 64 TCCTATGTCCTTATGCGATAGCTCATCCCAAGGTTGCACCTCAAGCTATTACAGC 123
QY 121 gttgaacaattgaagaaatgagggcctggaaccattagaagatcaacttccgaa 180
DB 124 GTTGAAGAACTTGAGGAATGAGAGGCGCTGGAACCATCAAGATATACCTTTGGCGAA 183
QY 181 ggcctcccttcaagtaagtgaaagacagagtgtatgaggtggacacacaaacttcaaa 240
DB 184 GCGAGCGCTTACAAAGTACGTGAAGAGAGAGGTTGATGAGGTTGACAAACAACTTACACA 243
QY 241 tacaattacagcgtgatcgagggcggtcccatatggcgacacattggaagaagcttccaac 300
DB 244 TACAGCTACACCGCTGATCGAGGATGATGCTCGGTGACAGCTGCGAAGGTTCTGCCAC 303
QY 301 gacataaagatggaacccctgagtgagatccatcttgaagatcaacaagaatgac 360
DB 304 GACCTGAAGATATGCGACGCCCTGCTGGAGAGATCCATCTTGAAGATCAGCAGCAAGTTTC 363
QY 361 cacaccaaagtgacatgagtgaaagcagagcaggttaaggaagaatgaagaatggagc 420
DB 364 CACGCCAAAGCGACCATGAGATTAATGACAGAGAGATGAAGGTTGCCAAGAAATGGCA 423
QY 421 gaagacatttggagggcggtgagagctactcttggcaaacctcgatgctacaactaa 480
DB 424 GAGAAACTTTTAAGGGGCTTGAAGACCTACTATTGCGACACTCTGCTGAATACAACTTAA 483

RESULT 10

US-07-847-010-18
Sequence 18, Application US/07847010
Patent No. 5693495
GENERAL INFORMATION:
APPLICANT: Breiteneder, Helmo
APPLICANT: Reikertorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Penlie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847, 010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 860 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN
US-07-847-010-18

Query Match 71.7%; Score 344; DB 2; Length 860;
Best Local Similarity 82.3%; Pred. No. 3,6e-102;
Matches 395; Conservative 0; Mismatches 85; Indels 0; Gaps 0;

QY 1 ggtgtgtaataatagagactgagaccactctgtatcccaagcagctgactgttcaag 60
DB 4 GGTGTTTCAATACGAGGTTGAGAGCCCTCGTTATCTCAAGCGCAAGGCTTCAAG 63
QY 61 gccttacccttgatgagcgaatacctcttccaaaggtgaccccaagcattagagt 120
DB 64 TCCTATGTCCTTATGCGATAGCTCATCCCAAGGTTGCACCTCAAGCTATTACAGC 123
QY 121 gttgaacaattgaagaaatgagggcctggaaccattagaagatcaagcttccgaa 180
DB 124 GTTGAAGAACTTGAGGAATGAGAGGCGCTGGAACCATCAAGATATACCTTTGGCGAA 183

QY 181 ggcctcccttcacgtgaaagacaggtgatgagtgagccacacaaacttcaaa 240
DB 184 GGCAGCGGTTACAGTAGTCGGAAGAGAGGGTTGATGAGTTGACACACAACTTCAAA 243
QY 241 tacacattacagcgtgatcgagggcggtcccatagggcacacatttggagaagatctccaac 300
DB 244 TATAGTACACCGGTGAGCGGGGTGATGCTCGGTGACAAAGTGCAGC 303
QY 301 gaataaagatagtgaaaccccgatggagagatccttgaagaatcagaaagatc 360
DB 304 GAGCTGAAGTATGAGACGCCCTGTTGGGATCACCCTTGAAGATCAGCAGCAAGTTC 363
QY 361 cacaccaaagtgacacatgagtgaaagcagagcaggttaagcgaagttaaagaatggc 420
DB 364 CACGCCAAAGGTGACATGATTAATGACAGAGATGAAGGTCGCCAAAGAAATGGCC 423
QY 421 gagaacatttgagggcggttgagagctacaccttggcacacatcgatgctcaactaa 480
DB 424 GAGAACTTTTAAGGGGGGTTGAGACCTACTATTGGCACACTCTGCTGAATACACTAA 483

RESULT 11
US-07-847-010-10
Sequence 10, Application US/07847010
Patent No. 5693495

GENERAL INFORMATION:

APPLICANT: Breiteneder, Helmo
APPLICANT: Reikerstorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESS: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010

TELECOMMUNICATION INFORMATION:

TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864

INFORMATION FOR SEQ ID NO: 10:

SEQUENCE CHARACTERISTICS:
LENGTH: 480 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: cDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:

ORGANISM: hazel (Corylus sp.)
IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN
US-07-847-010-10

Query Match 71.4%; Score 342.6; DB 2; Length 480;
Best Local Similarity 82.4%; Pred. No. 7.4e-102;
Matches 393; Conservative 0; Mismatches 84; Indels 0; Gaps 0;

QY 1 ggtgtttaattatgagactgagaccactctgttatcccaagatcagcttcaag 60
DB 4 GGTGTTTCAATTATGAGAGTTGAGATCTCCGTTATCCCTCGGCAAGGCTTTCAAG 63
QY 61 ggccttccttgatgagcgttaacctcttccaaaggttgaccccaagcatgaagt 120
DB 64 TCTATGTCCTTATGAGCGATGACCTATCCCAAGGTTGACCTCAAGCTATTACAC 123
QY 121 gtgaaacattgaaagaaatgagggcctggaacacatlaagaagatcagcttccgaa 180
DB 124 GTTGAANAAGTTGAAGAAATGAGAGGCGCTGGAACCATCAAGAAATACACTTTGGCGAA 183
QY 181 ggcctcccttcaagtcgtaagagacagagttgatgagtgagacacacaaactcaaa 240
DB 184 GGCAGCGGTTACAAAGTACGTGAAGAGAGAGGGTTGATGAGTTGACAAACAACTTCACA 243
QY 241 tacattacagcgtgatcgagggcggtcccatagggcacacatltgagaagatctccaac 300
DB 244 TACAGCTACACCGTGAAGTGAAGGATGATGCTCGGTGACAAAGCTGGAAGGTTCCAC 303
QY 301 gagaataagatgagcagacccctgatggagatccatcttgaagatcagcaacaagtac 360
DB 304 GAGCTGAAGATGAGGAGCGGCCCTGCGTGAAGATCATTGAAGATCAGCAGCAAGTTC 363
QY 361 cacaccaaagtgacacatgagtgaaagcagagcaggttaagcgaagttaaagaatggc 420
DB 364 CACGCCAAAGGCGCACATGATTAATGACAGAGATGAAGGTCGCCAAAGAAATGGCC 423
QY 421 gagaacatttgagggcggttgagagctacaccttggcacacatcgatgctcaactaa 480
DB 424 GAGAACTTTTAAGGGGGGTTGAGACCTACTATTGGCACACTCTGCTGAATACACTAA 483

RESULT 12

US-07-847-010-19
Sequence 19, Application US/07847010
Patent No. 5693495

GENERAL INFORMATION:

APPLICANT: Breiteneder, Helmo
APPLICANT: Reikerstorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Scheiner, Otto
APPLICANT: Ebner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESS: Pennie & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25

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1      CURRENT APPLICATION DATA:
2      APPLICATION NUMBER: US/07/847,010
3      FILING DATE: 01-JUN-1992
4      CLASSIFICATION: 435
5      ATTORNEY/AGENT INFORMATION:
6      NAME: Jones III, Harry C
7      REGISTRATION NUMBER: 20,280
8      REFERENCE/DOCKET NUMBER: 6530-010
9      TELECOMMUNICATION INFORMATION:
10     TELEPHONE: (212) 869-9090
11     TELEFAX: (212) 869-9741/8864
12     TELE: 66141 PENNIE
13
14     INFORMATION FOR SEQ ID NO: 19:
15     SEQUENCE CHARACTERISTICS:
16     LENGTH: 480 base pairs
17     TYPE: nucleic acid
18     STRANDEDNESS: single
19     TOPOLOGY: linear
20     MOLECULE TYPE: cdna
21     HYPOTHETICAL: NO
22     ANTI-SENSE: NO
23     ORIGINAL SOURCE:
24     ORGANISM: hazel (Corylus sp.)
25     IMMEDIATE SOURCE:
26     LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN
27
28     US-07-847-010-19

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Query Match	71.0%;	Score 341;	DB 2;	Length 480;
Best Local Similarly	82.2%;	Pred. No. 2.5e-101;		
Matches 392; Conservative	0;	Mismatches 85;	Indels 0;	Gaps 0

QY	1	gggtgtttaaatttttggagacttgcgaagaccacactctgtttcccaagagctgcagtttcaag	60
Db	4	GGTGTTTTCATTTACGAGGTTTGAGAACCCCTCCCTGTATCTTCAGCGGAGAAAGCTGTTCAG	63
QY	61	gaccttaaccttgaatggcgcataacctcttccaaaggttgcaccccaagcatatagagt	120
Db	64	TCTATATGCTCTGTATGGCGATTAACCTCATCCCAAAAGGTTGCACCTCAAGCTATATCAGC	123
QY	121	gtttaaacacttgaaggaatatgggggcccctggaaaccttaagaagatcacgtttccgaa	180
Db	124	GTTAATAAACGTTTGGAGGAATAATGGAGGCCCTGTGAACCATCAAGATATACCTTTGGGAA	183
QY	181	ggctcccttccaagtaacgtttaaagacagagttgatataggctgagccacacaaattcaaa	240
Db	184	GGCAGCGGTTTCAAGTACGTACGTAAAGAGAGGTTGATATGAGTTGCACACACAAACTTCAA	243
QY	241	tacaattaacgcgtgatctcgagggcgtgtccataagcgacacatgtgsgaaatctccaac	300
Db	244	TATATGCTTACACCGTATGATTCGAGGGGTGATGTCTGTGGTACAAAGCTGGAGAAAGTCTGCAGC	303
QY	301	gagaataagatagatggcgaaacccctcgatggggagatgcactttgaagatcacgaacaagtac	360
Db	304	GAGCTGAAGATAGTGGCAGCCCTCGTGGGGGATTCACCTTGAAGATACACAGCAAGTTTC	363
QY	361	cacaccaaagttgcacatagtgtaaaagcgacagagcaagttaagacaagttaagaagaattggc	420
Db	364	CACGCCAAAGGTGACATGAGATTAATATGACAGAGGAGATGAAGGTTGCCAAGAAGAAATGGCC	423
QY	421	gagacacattttagaggccgttttagagctacaccttggcacacttcgatgcctacaac	477
Db	424	GAGAAACTTTTAAAGGGCGGTTGAACCTTACTTATGGCACACACTCTGTGTAAATCAAC	480

RESULT 13
 US-08-363-010-3
 ; Sequence 3, Application US/08363010
 ; Patent No. 5512484
 ; GENERAL INFORMATION:
 ; APPLICANT: Yamamoto, Mika
 ; APPLICANT: Oheda, Kenji
 ; TITLE OF INVENTION: CARROT 16 KD PROTEIN, GENE CODING FOR

TITLE OF INVENTION: SAID PROTEIN AND PLASMID CONTAINING SAID GENE
 NUMBER OF SEQUENCES: 6
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
 STREET: 8110 Gatehouse Road, Suite 500 East
 CITY: Falls Church
 STATE: Virginia
 COUNTRY: U.S.A.
 ZIP: 22042
 COMPUTER READABLE FORM:
 MEDIUM TYPE: Floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: PatentIn Release #1.0, Version #1.30
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/363,010
 FILING DATE: 23-DEC-1994
 CLASSIFICATION: A35
 ATTORNEY/AGENT INFORMATION:
 NAME: Svensson, Leonard R.
 REGISTRATION NUMBER: 30,330
 REFERENCE/DOCKET NUMBER: 20-3628P
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: (703) 205-8000
 TELEFAX: (703) 205-8050
 TELEX: 248345
 INFORMATION FOR SEQ ID NO: 3:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 739 base pairs
 TYPE: nucleic acid
 STRANDEDNESS: single
 TOPOLOGY: linear
 MOLECULE TYPE: cDNA
 HYPOTHETICAL: NO
 ANTI-SENSE: NO
 ORIGINAL SOURCE:
 ORGANISM: Daucus carota
 STRAIN: Kuroda Gosun

Query	March	Similarity	26.7%	Score 128;	DB 1;	Length 739;	1
Best	Local	Similarity	56.9%	Pred. No. 3.6e-32;			
Matches	255;	Conservative	0;	Mismatches 190;	Indels	3;	Gaps
QY	22	gagaccacctcgttatccagcagcagctcgactcgcttaagcgcttacccttgaatgycgat	81				
Db	38	GAGATCATCTTCTTCAGTCTCCGCAAGAAATATTCAGGCGCATGTGCTTATGTGAT	97				
QY	82	aacctcttccaagaaggttgcaccccaagcattagcagtggtgtaaaacattgaaggaat	141				
Db	98	ACAGTATTTCACCAAGCGTCCCGAGGCTTCAAGAGATGTGTGATG--TTTAAAGAGAC	154				
QY	142	ggaagcgcttgaagcatttaagagaatcgacttcccgaaagcgcttccttcaagtacg	201				
Db	155	GGTGAGCTGGAACCGTACGAATTTATCACCTCTCCGAGAGTAGGCCCAATCACCTCATG	214				
QY	202	aagacagagtgtatcgatgagtgtagccacacaaacttcaataataatctaacggtgacg	261				
Db	215	ACGGTTAGACTGATGACAGTGAACAAGAGGCGCTTGACATAGATTTCCACAGTCATTGAT	274				
QY	262	ggcggtcccatagcgacacatttgaagaagatctccaacgagataaagatagtgcaacc	321				
Db	275	GGAGACATCTCTTGAAGATTGATCAATTCATTGAACCCCAATATGATGTGATGCAACT	334				
QY	322	cctgatgtgaagatcatcatcttgaagatcagcaacaagtataccacacaaaggtgacatgag	381				
Db	335	GCTGACGAGGTGATGATTACCAAGACCACTGCGCATTTTCCACACCAAAAGGCGATGCCGTG	394				
QY	382	gtgaagcgacagcgaggttgaagcgcaagttaagaaatgycgcgagacacctttagagcggt	441				
Db	395	GTTCTCTGAGGAACATCTAAAGTTTGCAATGCTCGAAGACACAGCTCTCTTTCACGCTATT	454				

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 508.71 Seconds
(without alignments)
19.835 Million cell updates/sec

Title: US-09-270-910-37

Perfect score: 819
Sequence: 1 GVFNYETETTSVTPARARFK.....GETLLRANVESYLLAHSDAYN 159

Scoring table:

BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 182106 seqs, 63460219 residues

Total number of hits satisfying chosen parameters: 182106

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database :

1: PIR_65:*
2: PIR1:*
3: PIR3:*
4: PIR4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Match	Query Length	DB ID	Description
1	815	99.5	160	2	S05376 major pollen aller
2	795	97.1	160	2	G53699 major pollen aller
3	790	96.5	160	2	D55699 major pollen aller
4	789	96.3	160	2	E55699 major pollen aller
5	787	96.1	160	2	C55699 major pollen aller
6	786	96.0	160	2	F55699 major pollen aller
7	780	95.2	160	2	I55699 major pollen aller
8	740	90.4	160	2	A57427 major pollen aller
9	734	89.6	160	2	A55699 major pollen aller
10	730	89.1	160	2	H55699 major pollen aller
11	722	88.2	160	2	B55699 major pollen aller
12	707	86.3	160	2	S47250 gene 1-Sc1 protein
13	703	85.8	159	2	S47251 gene 1 Sc2 protein
14	621	75.8	160	2	S30054 major allergen Cor
15	621	75.8	160	2	S30055 major allergen Cor
16	615	75.1	160	2	S30053 major allergen Cor
17	612	74.7	160	2	S47249 gene 1-Sc3 protein
18	601	73.4	160	2	S30056 major allergen Cor
19	545	66.5	160	2	T17005 major allergen Mal
20	534	65.2	160	2	T17006 major allergen Mal
21	530	64.7	160	2	T17007 major allergen Mal
22	505.5	61.7	159	2	T17004 major allergen Mal
23	465.5	56.8	159	2	JC4276 Malol protein - ap
24	447.5	54.6	153	2	S51119 pathogenesis-relat
25	420.5	51.3	157	2	T09659 stress response ge
26	415.5	50.7	157	2	T09526 pathogenesis-relat
27	386	47.1	158	2	S42650 pathogenesis-relat
28	382	46.6	158	2	S42650 pathogenesis-relat
29	381	46.5	158	2	S20518 hypothetical prote

30	374.5	45.7	159	2	T06768 disease resistance
31	371	45.3	158	2	S47140 pathogenesis-relat
32	370	45.2	156	1	SNFB1 pathogenesis-relat
33	367	44.8	155	2	S52664 pathogenesis-relat
34	367	44.8	158	2	S20517 hypothetical prote
35	362.5	44.3	155	1	SNFB2 pathogenesis-relat
36	362.5	44.3	155	2	T11670 pathogenesis relat
37	342.5	41.8	155	2	S35162 STH-21 protein - p
38	342.5	41.8	155	2	S35161 STH-2 protein - po
39	332.5	40.6	157	2	S42649 pathogenesis-relat
40	330.5	40.4	158	2	S12568 pathogenesis-relat
41	317	38.7	178	2	T07403 TSI-1 protein - to
42	316	38.6	155	2	S04552 pathogenesis-relat
43	312	38.1	155	2	S04553 pathogenesis-relat
44	310.5	37.9	154	2	S63984 major allergen Api
45	302	36.9	155	2	T14918 pathogenesis-relat

ALIGNMENTS

```
RESULT
1
S05376
major pollen allergen Bet v 1 - European white birch
C:Species: Betula pendula (European white birch)
C>Date: 31-Mar-1990 #sequence.revision 31-Mar-1990 #ext_change 04-Feb-2000
C:Accession: S05376, J04834, B53288
R:Breiteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; S
EMBO J. 8, 1935-1938, 1989
A:Title: The gene coding for the major birch pollen allergen Betv1, is highly homolog
A:Reference number: S05376, MUID:90005395
A:Accession: S05376
A:Molecule type: mRNA
A:Residues: 1-160 <BRE>
A:Cross-references: EMBL:X15877; NID:q17937; PIDN:CAA33887.1; PID:q17938
R:Kungl, A.J.; Susani, M.; Lindeman, A.; Machiusi, M.; Visser, A.D.W.G.; Scheiner, O.
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A:Title: Evidence for an alpha helical T cell epitope in the C-terminus of the main b
A:Reference number: J04834, MUID:96254050
A:Accession: J04834
A:Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-160 <KUN>
R:Ipse, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A:Title: The NH2-terminal amino acid sequence of the immunochemically partial identic
s) Car b I and oak (Quercus alba) Que a I pollens.
A:Reference number: A53288; MUID:92072607
A:Accession: B53288
A:Status: preliminary
A:Molecule type: protein
A:Residues: 2-39, 'XX', 42-44 <IPS>
A:Cross-references: PID:q239734; PIDN:AAB20452.1
A:Experimental source: pollen
A:Note: sequence extracted from NCBI backbone (NCBIP:68408)
C:Comment: This protein induces IgE synthesis by B cells in a T cell dependent mann-
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
F:2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 99.5%; Score 815; DB 2; Length 160;
Best Local Similarity 99.4%; Pred. No. 2.2e-64;
Matches 158; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 GVFNYETETTSVTPARARFKATITLDDNLFPPKAPPAISSEVIEGNGGPGTITKISFPE 60
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
DB 2 GVFNYETETTSVTPARARFKATITLDDNLFPPKAPPAISSEVIEGNGGPGTITKISFPE 61

QY 61 GVPFKYVKRVDVDEVTNFKYNSVIEGPIGDTLEKISNEIKYVTPDGGSTLKISNKY 120
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
DB 62 GVPFKYVKRVDVDEVTNFKYNSVIEGPIGDTLEKISNEIKYVTPDGGSTLKISNKY 121
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Oy      121  HTRKGDHEVKAQVNAKSEMGETLLRAVESYLLAHSDAVN 159
          ||||||||||||||||||||||||||||||||||||||||
Db      122  HTRKGDHEVKAQVNAKSEMGETLLRAVESYLLAHSDAVN 160

RESULT  2
G55699
major pollen allergen Bet v 1j - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: G55699; S41902
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
  ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A:Reference number: A55699; MUID:95153322
A:Accession: G55699
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77271; NID:g452739; PIRN:CAA54487.1; PID:g452740
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
;2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>

```

Query Match	97.18;	Score 795;	DB 2;	Length 160;
Best Local Similarity	95.68;	Pred.	No. 1.2e-62;	
Matches 152; Conservative	5;	Mismatches 2;	Indels 0;	Gaps 0;

QY	1	GVENETETSTSYIPARLFKAFILDDGDLPRKVAPOALSSVENIEGNGPPTIKKISFE	60
Db	2	GVENETETATSYIPARLFKAFILDDGDLPRKVAPOALSSVENIEGNGPPTIKKISFE	61
QY	61	GLPEFYVYDRDVEDHTNFKNKNSYIEBGGPGLDLEKISNRIKVAIPDDGSILIKISNKY	120
Db	62	GEPEFYVYDRDVEDHTNFKNKNSYIEBGGPGLDLEKISNRIKVAIPDDGSILIKISNKY	121
QY	121	HTKGDHEVKAEQVYKASKEMGETLLRAVESYLLASHDAYN	159
Db	122	HTKGDHEVKAEQVYKASKEMGETLLRAVESYLLASHDAYN	160

RESULT 3
D55699
major pollen allergen Bet v 1e - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: D55699; S41899
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography-mass spectrometry
A:Reference number: A55699; MUID:9515322
A:Accession: D55699
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77267; NID:9452733; PIDN:CAA54483.1; PID:9452734
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
?:2-160/Product: major pollen allergen Bet v 1e #status experimental <MAT>

Query Match	96.5%	Score 790;	DB 2;	Length 160;
Best Local Similarity	95.0%	Pred. No. 3.4e-62;		
Matches 151;	Conservative	6;	Mismatches 2;	Indels 0;
				Gaps 0;

Qy	1	GVENETETTSYIPAA	LEKAFILLOGDN	LPVAPDAISSV	ENIEGNGSGPG	TIKITSFPE	60
Ob	2	GVENETETTSYIPAA	LEKAFILLOGDN	LPVAPDAISSV	ENIEGNGSGPG	TIKITSFPE	61

QY	QY	Db	QY	QY
61	61	62	121	122
GLPKRYKADPDEVDHNNFNKXSVIEGGPGLDPLEKTSNEIKRVANPDGGSILKISNK	GLPKRYKADPDEVDHNNFNKXSVIEGGPGLDPLEKTSNEIKRVANPDGGSILKISNK	GLPKRYKADPDEVDHNNFNKXSVIEGGPGLDPLEKTSNEIKRVANPDGGSILKISNK	HTKGDHEVKAKQVASKEMGDTLLRAVESYLLAHSDAYN	HTKGDHEVKAKQVASKEMGDTLLRAVESYLLAHSDAYN
120	120	121	159	160

RESULT
E55699

major pollen allergen Bet v 1f/1 - European white birch
C:Species: *Betula pendula* (European white birch)
C:Date: 01-Dec-1995 #sequence.revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: E556599; S41905; S41900
R:Swoboda, I., Jilek, A., Ferreira, F., Engel, E., Hoffmann-Sommergruber, K., Schein-
th, M.

A;Reference number: A55699; MUID:95155322

A; molecule type: mRNA

A;Residues: 1-160 <SWO>

A;Note: the source is designated as *Betula verrucosa*

submitted to the EMBL Data Library, January 1994

A; Reference number: S41896

A; Accession: S41905
A; Status: preliminary

A: molecule type: mRNA

A;Residues: 1-160 <SW2>

A; Cross-references: EMBL:X77274; NID:g452745; PIDN:CAA54490.1; PID:g452746

A:Note: the source is designated as *Betula verrucosa*

C;Superfamily: pathogenesis-related protein
C;Keywords: pollen

```
c;keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>
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Query Match	96.3%	Score 789;	DB 2;	Length 160;
Best Local Similarity	95.0%	Pred. No. 4.1e-62;		
Matches 151; Conservative	5;	Mismatches 3;	Indels 0;	Gaps 0;

QY 1 GVENYEETTSVIPARLEKAFILDDGNLFPPKAPQAISSVENIEGNGEGCTIKRISFPE 60
||||| | ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 2 GVENEYEIETSVIPARLEKAFILDDGNLFPKPAPQAISSVENIEGNGEGCTIKRISFPE 61

Qy 61 GLEPKYVKRDVDEVDHTNFKYNYSVIEGGPISGDTLEKISNEIKIVATPDGGSILKSNNKY 120
| | | | | | | | | | : | | | | | | | | | | : | | | | | |
Db 62 GLEPKYVKRVDVDEVDHTNFKYSYSVIEGGPVGDTEKISNEIKIVATPDNGSILKSNNKY 121

QY	121	HTKGDHEVKAEOQYASKEMGETLLRAVESYLHAHSDAYN	159
		:	
D6	122	HTKGDHEVKAEOIATASKEMGETLLRAVESTILHAHSDAYN	160

RESULT

major pollen allergen Bet v 1d/h - European white birch
C:Species: Betula pendula (European white birch)
C:date: 01-Dec-1995 #sequence.revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: C55699; S41901; S41898
P:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Schrott-
h, M.

A;Reference number: A55699; MUID:951553222

A;Accession: C55699

A;Molecule type: mRNA

A;Residues: 1-160 <SWO>
A:Cross-references: FMB

A/Note: the source is designated as *Betula verrucosa*

R; Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sommergruber, K.; Heberl

submitted to the EMBL Data Library, January 1994

A:Reference number: S41896

A:Accession: S41901

A:Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-160 <SWO>

A:Cross-references: EMBL:X77270; NID:g452737; PIDN:CA54486.1; PID:g452738

A:Note: the source is designated as Betula verrucosa

C:Superfamily: pathogenesis-related protein

C:Keywords: pollen

F:2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F:83/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match

Best Local Similarity 96.1%; Score 787; DB 2; Length 160;
Matches 151; Conservative 4; Mismatches 4; Indels 0; Gaps 0;

Qy 1 GFVNTEETTSVIPAARLFKAFILDDGDNLFPRVAPQAISSEVENIEGNGPGTIKISFPE 60

Db 2 GFVNTEETTSVIPAARLFKAFILDDGDNLFPRVAPQAISSEVENIEGNGPGTIKISFPE 61

Qy 61 GPFKRYKRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGCGVLKISNKY 120

Db 62 GPFKRYKRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGCGVLKISNKY 121

Qy 121 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 159

Db 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

Qy 122 HTKGDEHVAEQYKASKEMGETLLRAVESYLLAHSADYN 160

[illegible]

```

RESULT      9
A:Accession A55699
C:Major pollen allergen Bet v 1b - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: A55699; S41401
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
  ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chromatography
A:Reference number: A55699; MUID:95155322
A:Accession: A55699
A:Molecule type: mRNA
A:Residues: 1-160 <SMO>
A:Cross-references: EMBL:X77200; NID:9450884; PIRN:CAA54421.1; PID:9450885
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
;2-160/Product: major pollen allergen Bet v 1b #status experimental <MAY>

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Query Match Similarity      89.68; Score 734; DB 2; Length 160;
Best Local Similarity      88.78; Pred. No. 2.7e-57;
Matches 141; Conservative 8; Mismatches 10; Indels 0; Gaps 0;

Qy 1 GFVNYETETTSVTPAARLFKAFILDDGNLFPRKPAQAISSVENIEGNGPGTIKISFPE 60
    |||||
Db 2 GFVNYETETTSVTPAARLFKAFILLEGDTLIPRVAPQAISSVENIEGNGPGTIKITEPE 61
    |||||

Qy 61 GLPFRKYVRKRDVDEVDHINFEKNTSYIEGGPIGDTLEKISNEKIYATPGGSLIKISNKY 120
    |||||
Db 62 GSPFKYVKREVDVDHNFANFKYSYINIEGALGDTLEKICNEKIYATPGGSLIKISNKY 121
    |||||

Qy 121 HTKGDHEVRKAQVAKSKEMGETLLRAVESYLLASHSDAYN 159
    |||||
Db 122 HTKGDHEMRKAEHMKAIKEKGEALLRAVESYLLASHSDAYN 160
    |||||

RESULT 10
H55699
C:Major pollen allergen Bet v 1k - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: H55699; S61903
C:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
  Ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A:Reference numbers: A55699; M01D:95155322
A:Accession: H55699
A:Molecule type: mRNA
A:Residues: 1-160 <RNA>
A:Cross-references: EMBL:X77272; NID:q458478; PIDN:CAA54488.1; PID:q452742
A:Note: the source is designated as Betula verrucosa
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen
;2-160/Product: major pollen allergen Bet v 1k #status experimental <MAT>

```

Oy 1 GVNPEETTSVIPAALFEAFILDDGNLPPKPAOAISSVENTEENGSGGTIKRISPE 60
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db 2 GVNFSESTTSVIPAARLFKAFLIEGDTLLPKPAOAIISSVENI EONGSGGTIKRTTPE 61

Oy 61 GLPFYVADRYDEVDFHNFKNYSVIEGGP IGDTLKISNEIKYATPDGGSITLKSNXY 120
| | | | | | | | | | | | | | | | : | | | | | | | | | | | | | | | |
Db 62 GSPIFYAERDEVDNHNFKYSIMIEGAGLTGLEKICNEIKYATPDGGSITLKSNKY 121

Oy 121 HTKGDEHYKAEQVAKSKEMSETILLRAVESYLASHDAYN 159
| | | | | | | | : | | | | | | | | | | | | | | | | | | | | | | | |
Db 122 HTKGDHEKAKAHMAIKEKGEGALLIRAVESYLLASHDAYN 160

RESULT 11
B55699
major pollen allergen Bet v 1c - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C:Accession: B55699; S41897
R:Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A:Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chro-
A:Reference number: A55699; MUID:95155322
A:Accession: B55699
A:Molecule type: mRNA
A:Residues: 1-160 <SNO>
A:Cross-references: EMBL:X77265; NID:G452729; PIDD:CA54481.1; PID:G452730
A:Note: the source is designated as Betula verrucosa
C:Keywords: pathogenesis-related protein
C:Keywords: pollen
I:2-160/Product: major pollen allergen Bet v 1c #status experimental <NAT>

Query March	88.2%;	Score 722;	DB 2;	Length 160;
Best Local Similarity	87.4%;	Pred. No. 36-56;		
Matches 139;	Conservative 9;	Mismatches 11;	Indels 0;	Gaps

QY	1	GVENYETETTSVLPAAFLKFAFLIDGDNLTFPKPAPOAISSVENIEGNGPGTKIKTISFPE	60
Db	2	GVFNVESETTSVLPAAFLKFAFLIEGDTLIPKPAPOAISSVENIEGNGPGTKIKTIFPE	61
QY	61	GLPKYIKYKRDVEYDHTNEKINISVIEGGPIGDTLEKISNEIKIYATPBGGSILKISNKY	120
Db	62	GSPKRYKERYERDEVDHANFNYYSMIEGGALGDTLEKICNEIKIYATPBGGSILKISNKY	121
QY	121	HTRGDHEVKAPQYKASKEMETTLIRAVESILLASHSAYN	159
Db	122	HTKGDQEKAKLHMKAIKKEGALLIRAVESILLASHSAYN	160

```

RESULT 12
S47250
gene I-scl protein - European white birch
C:Species: Betula pendula (European white birch)
C:Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1995
C:Accession: S47250
R:Swoboda, I., Scheidter, O., Heberle-Bors, E., Vicente, O.
Submitted to the EMBL Data Library, August 1994
A:Reference number: S47249
A:Accession: S47250
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-160 <SWO>
A:Cross-references: EMBL:X77599; NID:g534909; PIDN:CAA54694.1; PID:g534910
A:Note: the source is designated as Betula verrucosa
Superfamily: pathogenesis-related protein

```


QY 1 GVNNETTTSVIPAAARLFKAFILDDGNLPPKPAQAASSVENIEENGSGPTIKTISPE 60
Db 2 GVFDEGGTTSVIPAAARLFKAFILDDGNLLPKPAQPTSCVENIEENGSGPTIKTITPE 61
QY 61 GLPEKYVADRDVEDVDHNFKNYSVIEGDPIDGTLEKISNEIKIYATPGGGSILKISNKY 120
Db 62 GSPFKYAKERVDVDHNFKNYSVIEGGVAGTLEKICNEIKIYAPGGGSILKISNKY 121
QY 121 HTKGDEHYKAEQVASKEMGTETLLRAVESYLLASHDAYN 159
Db 122 HTKGHEHKAQIKASKEKEKALFRAVESYLLASHDAYN 160

RESULT 13
S47251
gene 1 Sc2 protein - European white birch
C:Species: *Betula pendula* (European white birch)
C:date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C:Accession: S47251
R:Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
Submitted to the EMBL Data Library, August 1994
A:Reference number: S47249
A:Accession: S47251
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-159 <SWO>
A:Cross-references: EMBL:X77600; NID:g534899; PIDN:CA45695.1; PID:g534900
A:Note: the source is designated as *Betula verrucosa*
C:Superfamily: pathogenesis-related protein

	Query Match	Similarity	85.8%	Score 703;	DB 2:	Length 159;
	Best Local	Similarity	84.9%;	Pred No. 1.4e-54;		
	Matches	135; Conservative	9;	Mismatches 15;	Indels 0;	Gaps 0.
OY	1	GVENETETTSTVPAARLEKAFILDDGDLNIPRYAPDAISSVENIEBNGSGPGTIKKISFPE				60
Dd	1	GVFDYEGGETTVTTPAARLEKATFLDDGDNLIPRYAPQAVSCVENIEBNGSPGIKTITFE				60
OY	61	GLPFTYVDKDVRDVEVDHTNFKNYSVIEGGPIDDITLTKISNEIKIYATPDGGSITLKSNKY				120
Dd	61	GSFPFYVERKEDVEDRVNRNKYSVSIEGAVGADTTLEKICNEIKIYPAPGCGSITLKSNKY				120
OY	121	HTKGDEHYAKBOVKASKEMGETLLRAVESYLLAHSAAYN				159
Dd	121	HTKGNHEMAEQIKASKEKAELFRAVESYLLLAHSAAYN				159

RESULT 14
S30054
major allergen Cor a 1/6 - European hazel
C:Species: Corylus avellana (European hazel)
C:Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C:Accession: S30054
R:Breitenbach, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M.; Eder, J. Biochem. 212, 355-362, 1993
A:Title: Four recombinant isoforms of Cor a 1, the major allergen of hazel pollen, show
A:Reference number: S30053; MUID:93185652
A:Accession: S30054
A:Molecule type: mRNA
A:Residues: 1-160

A:Cross-references: EMBL:X71000; NID:g22689; PIDN:CAA50328.1; PID:g22690
C:Genetics:
A:Gene: Cor a 1/6
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen

Query Match	75.8%	Score 621	DB 2	Length 160
Best Local Similarity	73.0%	Pred. NO. 2.1e-47		
Matches 116	Conservative 22	Mismatches 21	Indels 0	Gaps 0

Db 2 GVENNEVEPTSPYIPARLFKFSYVLDDGDLKIKVAPQATTSVENNEGGNGPPTINNITGE 61

QY 61 GLPEFYVADRDVEDDHNFKNYSYIEGPGIDPLEKTSNEIKIKVAPDGGSIILKISKY 120

Db 62 GSRYYVEREDVDENITFNKSYTYIEGDYVGDRIEKCSEIKITVAPAGCSILIKSEKF 121

QY 121 HTKGDHEVKAROVKASKEMGETLLRAVESYLLLAHSDAYN 159

Db 122 HAKGDHETNAEEMKCAKEMAEKLLRAVETTYLLAHSAEYN 160

RESULT 15
S30055
major allergen Cor a I/11 - European hazel
C:Species: Corylus avellana (European hazel)
C:Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
A:Accession: S30055; S35507
R:Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breiteneder, H.; Bricchi, J. Biochem. 212, 355-362, 1993
A:Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, show
A:Reference number: S30053; MUID:93185652
A:Accession: S30055
A:Molecule type: mRNA
A:Residues: 1-160 <BBE1>
A:Cross-references: EMBL:X70997
R:Breiteneder, H.
submitted to the EMBL Data Library, February 1993
A:Reference number: S35507
A:Accession: S35507
A:Molecule type: mRNA
A:Residues: 1-133, 'I', 135-160 <BRE2>
A:Cross-references: EMBL:X70997; NID:922683; PIDN:CAA50325.1; PID:g22684
C:Genetics:
A:Gene: Cor a I/1
C:Superfamily: pathogenesis-related protein
C:Keywords: pollen

	Query Match	75.8%	Score 621	DB 2	Length 160	
	Best Local Similarity	73.0%	Pred. No. 2	1e-47		
	Matches 116	Conservative	22	Mismatches 21	Indels 0	Gaps 0
OY	1	GVFNATETTTVTIPARLFKAFILDDGMLFPVAPQAISSVENIEGNGSGPGRIKISPE	60			
DB	2	GVFNATETTTVTIPARLFKFSYLDGDKILPVAQAITSVENENGSGPGRIKNTFE	61			
OY	61	GLPEFYKRDVDEVDHINEKINYVIEGGPGIDTLEKISNEIKIYATPDGGSILKISKY	120			
DB	62	GSRYKYVERVDEVDNTNETGYVIEGVLGDKLEKCKHEIKIYAAPGGGSILKISSKF	121			
OY	121	HTKGDHEVKAEOYKASKMEGTELLAVESYLLAHSDAYN	159			
DB	122	HAKGDEHNAEMKGAKEAEKRLAVETLYLLAHSAEYN	160			

```
Search completed: December 11, 2000, 09:58:34
Job time: 1011 sec
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GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 751.25 Seconds
(without alignments)
19.762 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
Sequence: 1 GFVNFETETTSVIPARLFK.....GETLLRAVESYLAHSDAYN 159

Scoring table: BIOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 297973 seqs, 93374136 residues
Total number of hits satisfying chosen parameters: 297973

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-Processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :
1: SP_TREMBL_14:*
2: SP_Archaea:*
3: SP_Bacteria:*
4: SP_Fungi:*
5: SP_Human:*
6: SP_Invertebrate:*
7: SP_Mammal:*
8: SP_Mhc:*
9: SP_Organelle:*
10: SP_Phage:*
11: SP_Plant:*
12: SP_Rodent:*
13: SP_Virus:*
14: SP_Vertebrate:*
14: SP_Unclassified:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	814	99.4	160	10	Q96366 betula verr
2	812	99.1	160	10	Q24642 betula verr
3	810	98.9	160	10	Q42499 betula verr
4	808	98.7	160	10	Q23752 betula verr
5	807	98.5	160	10	Q23752 betula verr
6	806	98.4	160	10	Q96371 betula verr
7	805	98.3	160	10	Q96370 betula verr
8	804	98.2	160	10	Q96370 betula verr
9	804	98.2	160	10	Q96370 betula verr
10	803	98.0	160	10	Q96365 betula verr
11	803	98.0	160	10	Q96365 betula verr
12	801	97.8	160	10	Q96368 betula verr
13	801	97.8	160	10	Q96368 betula verr
14	800	97.7	160	10	Q96368 betula verr
15	799	97.6	160	10	Q96368 betula verr
16	798	97.4	160	10	Q96367 betula verr
17	798	97.4	160	10	Q96367 betula verr
18	798	97.4	160	10	Q96367 betula verr
19	796	97.2	160	10	Q23754 betula verr

20	795	97.1	160	10	Q39426 betula verr
21	793	96.8	160	10	Q23751 betula verr
22	792	96.7	160	10	Q96372 betula verr
23	789	96.3	160	10	Q96372 betula verr
24	788	96.2	160	10	Q96372 betula verr
25	787	96.1	160	10	Q96372 betula verr
26	782	95.5	159	10	Q96372 betula verr
27	775	94.6	160	10	Q96372 betula verr
28	773	94.4	159	10	Q96372 betula verr
29	751	91.7	160	10	Q96372 betula verr
30	744	90.8	160	10	Q96372 betula verr
31	743	90.7	159	10	Q96372 betula verr
32	741	90.5	160	10	Q96372 betula verr
33	740	90.4	159	10	Q96372 betula verr
34	736	88.9	160	10	Q96372 betula verr
35	707	86.3	160	10	Q96372 betula verr
36	703	85.8	159	10	Q96372 betula verr
37	700	85.5	160	10	Q96372 betula verr
38	700	85.5	160	10	Q96372 betula verr
39	688	84.0	160	10	Q96372 betula verr
40	664	81.1	161	10	Q96382 betula verr
41	644	78.6	161	10	Q96381 betula verr
42	638	77.9	160	10	Q96378 betula verr
43	636	77.7	160	10	Q96377 betula verr
44	627	76.6	160	10	Q96379 betula verr
45	620	75.7	160	10	Q96503 carpinus be

ALIGNMENTS

RESULT 1
ID Q96366 PRELIMINARY; PRT: 160 AA.
AC Q96366;

DT 01-FEB-1997 (TREMBlrel. 02, Created)

DT 01-FEB-1997 (TREMBlrel. 02, Last sequence update)

DT 01-JUN-2000 (TREMBlrel. 14, Last annotation update)

DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (White birch) (Betula pendula).

OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.

RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN OBTAINED FROM ALLERGEN, SWEDEN;
RA Larsen J.N.;

RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
CC -! SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
PROTEIN.

DR EMBL: Z80101; CAB02156.1; -.
DR HSP: P13494; IRTV.
DR MENDEL: 30889; Betve;1174;30889.

DR INTERPRO: IPR000916; -.
DR PFAM: PF00407; bet.v.1; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETVI; 1.
KW Pathogenesis-related protein.

KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17557 MW; B2174110A9588AD4 CRC64;

Query Match 99.4%; Score 814; DB 10; Length 160;
Best Local Similarity 98.7%; Pred. No. 9.6e-62;
Matches 157; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 GFVNFETETTSVIPARLFKAFILDDGNLFPVAPQAISVYENIGNGGPGTIKISFPE 60
DB 2 GFVNFETETTSVIPARLFKAFILDDGNLFPVAPQAISVYENIGNGGPGTIKISFPE 61
QY 61 GPFKVKDRVDEVDHTNKNYVYIEGGPIDGTLEKISNEIKIYATPDGGSILKISNKY 120
DB 62 GPFKVKDRVDEVDHTNKNYVYIEGGPIDGTLEKISNEIKIYATPDGGSILKISNKY 121

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QY 121 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN 159
    |||||||
DB 122 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN 160

RESULT 2
ID 024642 PRELIMINARY: PRT: 160 AA.
AC 024642:
DT 01-JAN-1998 (TREMBLrel. 05, Last sequence update)
DT 01-JAN-1998 (TREMBLrel. 05, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BETV1.
GN BETV1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-LEAF;

QY 121 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN 159
    |||||||
DB 122 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN 160

Query Match 99.1%; Score 812; DB 10; Length 160;
Best Local Similarity 98.7%; Pred. No. 1.4e-61;
Matches 157; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 GFVNYETETTSVTPARLFKAFILDDGNLFPPKAPQAISSVENIEGNGPGTIKKISFPE 60
    |||||||
DB 2 GFVNYETETTSVTPARLFKAFILDDGNLFPPKAPQAISSVENIEGNGPGTIKKISFPE 61

QY 61 GLPFKYKADRVDEVDHTNFKNYSYIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 120
    |||||||
DB 62 GFPFKYKADRVDEVDHTNFKNYSYIEGGPMGDTLEKISNEIKIYATPDGGSILKISNKY 121

QY 121 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN 159
    |||||||
DB 122 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN 160

RESULT 3
ID 042499 PRELIMINARY: PRT: 160 AA.
AC 042499:
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE MAJOR ALLERGEN BET V 1.
GN BETV1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-LEAF;

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RA Hoffmann-Sommergruber K.;
RL Submitted (May-1996) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN;
RA Friedl-Hajek R., Radauer C., O'Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Betv1 isoforms including a naturally occurring truncated form of
RT the protein derived from Austrian birch pollen.";
RT Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.
CC -! SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
    PROTEIN.
CC EMBL: J72432; CAA96541.1; -.
CC DR EMBL: J72429; CAA96538.1; -.
CC DR EMBL: AJ006907; CAA07322.1; -.
CC DR HSSP: P15494; 1BTV.
CC DR MENDEL: 36840; betve;1174;36840.
CC DR INTERPRO: IPR00916; -.
CC DR PFM: PF00407; Bet_v-I; 1.
CC DR PRINTS: PR00634; BETALLERGEN.
CC DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
CC DR PRODOM: PD000531; -.
CC KW Pathogenesis-related protein.
CC SQ SEQUENCE 160 AA; 17541 MW; E3950410AFB85096 CRC64;

Query Match 98.9%; Score 810; DB 10; Length 160;
Best Local Similarity 98.7%; Pred. No. 2.1e-61;
Matches 157; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 GFVNYETETTSVTPARLFKAFILDDGNLFPPKAPQAISSVENIEGNGPGTIKKISFPE 60
    |||||||
DB 2 GFVNYETETTSVTPARLFKAFILDDGNLFPPKAPQAISSVENIEGNGPGTIKKISFPE 61

QY 61 GLPFKYKADRVDEVDHTNFKNYSYIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 120
    |||||||
DB 62 GFPFKYKADRVDEVDHTNFKNYSYIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 121

QY 121 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN 159
    |||||||
DB 122 HTKGDHEVKAQVAKSKEMGETLLRAVESYLLAHSDAYN 160

RESULT 4
ID 023752 PRELIMINARY: PRT: 160 AA.
AC 023752:
DT 01-JAN-1998 (TREMBLrel. 05, Created)
DT 01-JAN-1998 (TREMBLrel. 05, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BETV1.
GN BETV1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN;
RA Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA Riordan G., Scheiner O., Breiteneder H.;
RT Submitted (OCT-1997) to the EMBL/GenBank/DBJ databases.
CC -! SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
    PROTEIN.
CC EMBL: AJ002108; CAA05189.1; -.
CC DR HSSP: P15494; 1BTV.
CC DR MENDEL: 26841; betve;1174;26841.
CC DR INTERPRO: IPR000916; -.
CC DR PFM: PF00407; bet_v-I; 1.
CC DR PRINTS: PR00634; BETALLERGEN.
CC DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
CC DR PRODOM: PD000531; -.

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KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17523 MW; 69B410BBDA1ADD CRC64;

Query Match 98.7%; Score 808; DB 10; Length 160;
Best Local Similarity 98.7%; Pred. No. 3.1e-61;
Matches 157; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 GVFNYETETTSVTPARLRFKAFILDDGDLFPKVAPOAISSVENIEGNGPGTIIKISFPE 60
DB 2 GVFNYETETTSVTPARLRFKAFILDDGDLFPKVAPOAISSVENIEGNGPGTIIKISFPE 61
QY 61 GLPEFKYKRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPPGGSILKISNKY 120
DB 62 GPEFKYKRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPPGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSADAYN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSADAYN 160

RESULT 5
Q96371 PRELIMINARY; PRT; 160 AA.

AC Q96371; TREMBLrel. 02, Created)
DT 01-FEB-1997 (TREMBLrel. 02, last sequence update)
DT 01-FEB-1997 (TREMBLrel. 02, last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (white birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN OBTAINED FROM ALLERGEN, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
CC -! SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
DR EMBL; 280106; CAB02161.1; -.
DR HSSP; P15494; 1BTV.
DR MENDEL; 30893; Betve; 1174; 30893.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM; PD000531; -; 1.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17670 MW; 69B4410BBA6A1AC6 CRC64;

Query Match 98.5%; Score 807; DB 10; Length 160;
Best Local Similarity 98.7%; Pred. No. 3.7e-61;
Matches 157; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 GVFNYETETTSVTPARLRFKAFILDDGDLFPKVAPOAISSVENIEGNGPGTIIKISFPE 60
DB 2 GVFNYETETTSVTPARLRFKAFILDDGDLFPKVAPOAISSVENIEGNGPGTIIKISFPE 61
QY 61 GLPEFKYKRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPPGGSILKISNKY 120
DB 62 GPEFKYKRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPPGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSADAYN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSADAYN 160

RESULT 6
Q9SCH8 PRELIMINARY; PRT; 160 AA.
ID Q9SCH8;
AC Q9SCH8;

DT 01-MAY-2000 (TREMBLrel. 13, Created)
DT 01-MAY-2000 (TREMBLrel. 13, last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, last annotation update)
DE POLLEN ALLERGEN BETVI, ISOFORM AT50.
GN BETVI.
OS Betula verrucosa (white birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen.";
RL Mol. Immunol. 36:639-645 (1999).
DR EMBL; AJ006911; CA07326.1; -.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ SEQUENCE 160 AA; 17631 MW; DBA9575C4C393DA0 CRC64;

Query Match 98.4%; Score 806; DB 10; Length 160;
Best Local Similarity 97.5%; Pred. No. 4.5e-61;
Matches 155; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

QY 1 GVFNYETETTSVTPARLRFKAFILDDGDLFPKVAPOAISSVENIEGNGPGTIIKISFPE 60
DB 2 GVFNYETETTSVTPARLRFKAFILDDGDLFPKVAPOAISSVENIEGNGPGTIIKISFPE 61
QY 61 GLPEFKYKRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPPGGSILKISNKY 120
DB 62 GPEFKYKRVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPPGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSADAYN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSADAYN 160

RESULT 7
Q96370 PRELIMINARY; PRT; 160 AA.

AC Q96370; TREMBLrel. 02, Created)
DT 01-FEB-1997 (TREMBLrel. 02, last sequence update)
DT 01-FEB-1997 (TREMBLrel. 02, last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (white birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN OBTAINED FROM ALLERGEN, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
CC -! SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
DR EMBL; 280105; CAB02160.1; -.
DR HSSP; P15494; 1BTV.
DR MENDEL; 30892; Betve; 1174; 30892.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM; PD000531; -; 1.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17541 MW; DBAFL10BBD1CDADB CRC64;

Query Match	98.3%;	Score 805;	DB 10;	Length 160;
Best Local Similarity	98.1%;	Pred. No. 5.5e-61;		
Matches 156;	Conservative 1;	Mismatches 2;	Indels 0;	Gaps 0;

QY	1	GVPNNEETTIVIPAARLRFKAFILIDGDLPRVPAQOALSSVENIEGNGPGETIKKISPE	60
Db	2	GVPNEETTIVIPARLRFKAFILIDGDLPRVPAQOALSSVENIEGNGPGETIKKISPE	61
QY	61	GLPRKYAKDRDEVDHTNFKYNSYIEGGPIGDTLEKISNEIKIVATPDGSSILKISNKY	120
Db	62	GFPRKYAKDRDEVDHTNFKYNSYIEGGPGDITLEKISNEIKIVATPDGSSILKISNKY	121
QY	121	HTKGDHEYKAEQVAKSKEMGETILRAVESYLLAASDAYN	159
Db	122	HTKGDHEYKAEQVAKSKEMGETILRAVESYLLAASDAYN	160

RESULT	8			
09SC10				
ID	09SC10	PRELIMINARY;	PRT;	160 AA.
AC	09SC10;			
DT	01-MAY-2000 (TREMBLrel. 13, Created)			
DT	01-MAY-2000 (TREMBLrel. 13, Last sequence update)			
DT	01-JUN-2000 (TREMBLrel. 13, Last annotation update)			
DE	POLLEN ALLERGEN BETV1, ISOFORM AT37.			
GN	BETV1.			
OS	Betula verrucosa (White birch) (Betula pendula).			
OC	Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;			
OC	Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;			
OC	Betulaceae; Betula.			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE-POLLEN;			
RA	Friedl-Haefek R., Radauer C., Rlordin G., Hoffmann-Sommergruber K.,			
RA	Leberl K., Scheiner O., Bretlender H.;			
RT	"New Bet v 1 isoforms including a naturally occurring truncated form			
RT	of the protein derived from Austrian birch pollen.";			
RL	Mol. Immunol. 36:659-645(1999).			
DR	EMBL; AJ0065908; CAA07323.1; -.			
DR	INTERPRO; IPR000916; -.			
DR	PFAM; PF00407; Bet_v_1; 1.			
DR	PRINTS; PR00634; BETALLERGEN			
DR	PROSITE; PS00451; PATOGENESIS_BETV1; 1.			
SO	SEQUENCE 160 AA; 17572 MW; 99A3581E5B3A03FB CRC64;			

Query Match	98.2%	Score 804;	DB 10;	Length 160;
Best Local Similarity	97.5%	Pred. No. 6.7e-61;		
Matches 155; Conservative	2;	Mismatches 2;	Indels 0;	Gaps 0;

Qy	1	GVNVEVETTSVIPAARLFKFAFLIDGNLFPKVAPOAISVENIEGNGGCTIKKISFPE	60
Db	2	GVFVYETETTSVIPAARLEKFAFLIDGNLFPKVAPOAISVENIEGNGGPTIKKISFPE	61
Qy	61	GLPKYKDRDEVDHNTFKNTSVIEGGPGLDLEKISNRIKIVANPDGSLIKISNKY	120
Db	62	GEPPKIVKDRDEVDHNTFKNTSVIEGGPGLDLEKISNRIKIVANPDGSCVLKISNKY	121
Qy	121	HTKGDHEVKAEOVASKEMGETLLRAVESYLLAHSDAYN	159
Db	122	HTKGNHEVKAEOVASKEMGETLLRAVESYLLAHSDAYN	160

RESULT	9
Q9SCH9	
ID Q9SCH9	PRELIMINARY; PRT: 160 AA.
AC Q9SCH9	
DT 01-MAY-2000	(TREMBLrel. 13, Created)
DT 01-MAY-2000	(TREMBLrel. 13, Last sequence update)
DT 01-JUN-2000	(TREMBLrel. 14, Last annotation update)
DE POLLEN , ALLERGEN BETY1, ISOFORM AT45.	
GN BETY1	
OS Betula verrucosa (white birch) (Betula pendula).	

OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; endicots; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen.",
DR EMBL; AJ006910; CAA07325.1; -;
DR INTERPRO; IPR000916; -;
DR PAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALRGEN.
DR PROSITE; PS00451; PATHOGENSIS_BETV; 1.
SQ SEQUENCE 160 AA; 17615 MW; 5A2A67BCC45C3E CRC64;

Query Match	98.2%	Score 804;	DB 10;	Length 160;
Best Local Similarity	97.5%;	Pred. No. 6.7e-61;		
Matches 155; Conservative	3;	Mismatches 1;	Indels 0;	Gaps 0;

QY	1	GWNNTETTSVTPAARLFKAFILIDGNLPPKPAQPAISSVENIGNNGPGTIKKISPE	60
	2	GWNNTETTSVTPAARLFKAFILIDGNLPPKPAQPAISSVENIGNNGPGTIKKINPE	61
Db	2	GWNNTETTSVTPAARLFKAFILIDGNLPPKPAQPAISSVENIGNNGPGTIKKINPE	61
QY	61	GEPEFKVKRDEVDHNTFNKNTYSVIEGPGIDGLEISNEIKIYATPDGGSILKISNKY	120
	62	GEPEFKVKRDEVDHNTFNKNTYSVIEGPGIDGLEISNEIKIYATPDGGSILKISNKY	121
Db	62	GEPEFKVKRDEVDHNTFNKNTYSVIEGPGIDGLEISNEIKIYATPDGGSILKISNKY	121
QY	121	HTKGDEHVAIOVKASKEMGETLLRAVESYLAAHSDAYN	159
	122	HTKGDEHVAIOVKASKEMGETLLRAVESYLAAHSDAYN	160
Db	122	HTKGDEHVAIOVKASKEMGETLLRAVESYLAAHSDAYN	160

ID	Q96365	PRELIMINARY;	PRT;	160 AA.
AC	Q96365;			
DT	01-FEB-1997 (TREMBLrel. 02, Created)			
DT	01-FEB-1997 (TREMBLrel. 02, last sequence update)			
DT	01-JUN-2000 (TREMBLrel. 14, last annotation update)			
DE	POLLEN ALLERGEN BET V 1.			
OS	Betula verrucosa (White birch) (Betula pendula).			
OC	Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;			
OC	Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;			
OC	Betulaceae; Betula.			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE-POLLEN OBTAINED FROM ALLERGEN, SWEDEN;			
RA	Larsen J.N.;			
RL	Submitted (SEP-1996) to the EMBL/Genbank/DBJ databases.			
CC	-1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED PROTEIN.			
DR	EMBL: Z80100; CAB2155.1; -. DR			
DR	HSSP: P15494; 1BTV. DR			
DR	MENDEL, 30888; Betve;1174;30888. DR			
DR	INTERPRO: IPR000916; -. DR			
DR	PFAM: PF00407; Bet_V_1; 1. DR			
DR	PRINTS: PR00634; BETALLERGEN. DR			
DR	PROSITE: PS00451; PATHOGENESIS_BETVI; 1. DR			
DR	PRODOM: PD000531; -. 1. DR			
KW	pathogenesis-related protein.			
QO	SEQUENCE 160 AA; 17358 MW; 4200581E49B893E9 CRC64;			

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Query Match      .      98.0%  Score 803;  DB 10;  Length 160;
Best Local Similarity 96.9%  Pred. No. 8,1e-61;
Matches 154;  Conservative 3;  Mismatches 2;  Indels 0;  Gaps 0;

QY      1 GVNNETETTSVIPARLFKAFILDDGLLFFKVAQAISSENIENEGNGCGTITKRISFPE 60
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QY 1 GVENETETTSVIPARLFKAFILDGDNLEPKVAPQAISSVENEGNGGPGTIKKISPE 60
|||||

DB 2 GVENVETETTSVIPARLFKAFLIDGDNLFPPKVAPOAISSVENIEGNGGPGTIIKISFPE 61
QY 61 GLEPFKYKDVDEVDHTNFKNYSVIEGGPIGDTLEKISNEIKIVATPPDGGSLIKISNKY 120
DB 62 GLEPFKYKDVDEVDHTNFKNYSVIEGGPIGDTLEKISNEIKIVATPPDGGCVLTKISNKY 121
QY 121 HTKGDHEVKAQYKASKEMGETLLRAVESYLLAHSADAYN 159
DB 122 HTKGDHEVKAQYKASKEMGETLLRAVESYLLAHSADAYN 160

RESULT 11
Q95YWI PRELIMINARY; PRT; 160 AA.
ID 095YWI
AC 095YWI
DT 01-MAY-2000 (TReMBLrel. 13, Created)
DT 01-MAY-2000 (TReMBLrel. 13, Last sequence update)
DT 01-JUN-2000 (TReMBLrel. 14, Last annotation update)
DE ISOLALLERGEN BET V 1 B2.
GN BETV1B2.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RA Son D.Y., Hausstein D., Vieths S.
RT Cloning and characterization of isoforms of the major birchpollen
allergen Bet v 1.
RL Submitted (JAN-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF124838; AAD26561.1; -
DR INTERPRO: IPR000916; -
DR PFAM: PF00407; Bet_v_1; 1.
DR PRINTS; PRO0634; BETALLERGEN.
SQ SEQUENCE 160 AA; 17565 MW; E9BSF580BDALACS CRC64;

Query Match 98.0%; Score 803; DB 10; Length 160;
Best local Similarity 98.1%; Pred. No. 8, 1e-61;
Matches 156; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 GVENVETETTSVIPARLFKAFLIDGDNLFPPKVAPOAISSVENIEGNGGPGTIIKISFPE 60
DB 2 GVENVETETTSVIPARLFKAFLIDGDNLFPPKVAPOAISSVENIEGNGGPGTIIKISFPE 61
QY 61 GLEPFKYKDVDEVDHTNFKNYSVIEGGPIGDTLEKISNEIKIVATPPDGGSLIKISNKY 120
DB 62 GLEPFKYKDVDEVDHTNFKNYSVIEGGPIGDTLEKISNEIKIVATPPDGGCVLTKISNKY 121
QY 121 HTKGDHEVKAQYKASKEMGETLLRAVESYLLAHSADAYN 159
DB 122 HTKGDHEVKAQYKASKEMGETLLRAVESYLLAHSADAYN 160

RESULT 12
Q96368 PRELIMINARY; PRT; 160 AA.
ID 096368
AC 096368;
DT 01-FEB-1997 (TReMBLrel. 02, Created)
DT 01-FEB-1997 (TReMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TReMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RA TISSUE-POLLEN OBTAINED FROM ALLERCON, SWEDEN;
RA Larsen J.N.
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.

DR EMBL; Z80103; CAB02158.1; -
DR HSSP; P15494; 1BTV.
DR MENDEL; 30891; Betv; 1174; 30891.
DR INTERPRO; IPR000916; -
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PRO0634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV1; 1.
DR PRODOM; PD000531; -; 1.
KW pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17466 MW; 430D72F300B9BCE CRC64;

Query Match 97.8%; Score 801; DB 10; Length 160;
Best local Similarity 97.5%; Pred. No. 1, 2e-60;
Matches 155; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 GVENVETETTSVIPARLFKAFLIDGDNLFPPKVAPOAISSVENIEGNGGPGTIIKISFPE 60
DB 2 GVENVETETTSVIPARLFKAFLIDGDNLFPPKVAPOAISSVENIEGNGGPGTIIKISFPE 61
QY 61 GLEPFKYKDVDEVDHTNFKNYSVIEGGPIGDTLEKISNEIKIVATPPDGGSLIKISNKY 120
DB 62 GLEPFKYKDVDEVDHTNFKNYSVIEGGPIGDTLEKISNEIKIVATPPDGGCVLTKISNKY 121
QY 121 HTKGDHEVKAQYKASKEMGETLLRAVESYLLAHSADAYN 159
DB 122 HTKGDHEVKAQYKASKEMGETLLRAVESYLLAHSADAYN 160

RESULT 13
Q9SC12 PRELIMINARY; PRT; 160 AA.
ID 09SC12
AC 09SC12;
DT 01-MAY-2000 (TReMBLrel. 13, Created)
DT 01-MAY-2000 (TReMBLrel. 13, Last sequence update)
DT 01-JUN-2000 (TReMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BETV1, ISOFORM AT10.
GN BETV1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RA TISSUE-POLLEN;
RA Friedl-Hajer R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen."
RL Mol. Immunol. 35:639-645(1999).
DR EMBL; AJ006904; CA07319.1; -
DR INTERPRO: IPR000916; -
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PRO0634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV1; 1.
SQ SEQUENCE 160 AA; 17520 MW; EB3128ED2A630A23 CRC64;

Query Match 97.8%; Score 801; DB 10; Length 160;
Best local Similarity 97.5%; Pred. No. 1, 2e-60;
Matches 155; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 GVENVETETTSVIPARLFKAFLIDGDNLFPPKVAPOAISSVENIEGNGGPGTIIKISFPE 60
DB 2 GVENVETETTSVIPARLFKAFLIDGDNLFPPKVAPOAISSVENIEGNGGPGTIIKISFPE 61
QY 61 GLEPFKYKDVDEVDHTNFKNYSVIEGGPIGDTLEKISNEIKIVATPPDGGSLIKISNKY 120
DB 62 GLEPFKYKDVDEVDHTNFKNYSVIEGGPIGDTLEKISNEIKIVATPPDGGCVLTKISNKY 121
QY 121 HTKGDHEVKAQYKASKEMGETLLRAVESYLLAHSADAYN 159
DB 122 HTKGDHEVKAQYKASKEMGETLLRAVESYLLAHSADAYN 160

RESULT 14
Q9SYW0 PRELIMINARY; PRT: 160 AA.
AC Q9SYW0;
DT 01-MAY-2000 (TREMBLrel. 13, Created)
DT 01-MAY-2000 (TREMBLrel. 13, last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, last annotation update)
DE ISOLALBERGEN BET V 1 BL.
GN BETV1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RA Son D.Y., Hausstein D., Vieths S.;
RT "Cloning and characterization of isoforms of the major birchpollen
allergen Bet v 1."
RL Submitted (JAN-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF124837; AAD26560.1; -.
DR INTERPRO; IPR00916; -.
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV1; 1.
SQ SEQUENCE 160 AA; 17530 MM; 4200581E49B88CD4 CRC64;

Query Match 97.7%; Score 800; DB 10; Length 160;
Best Local Similarity 96.2%; Pred. No. 1.5e-60;
Matches 153; Conservative 4; Mismatches 2; Indels 0; Gaps 0;

QY 1 GVFNNETETTSVIPARLFKAFILDDGNLFPRVAPQAISVENIEGNGPGTIKKISFPE 60
DB 2 GVFNNETETTSVIPARLFKAFILDDGNLFPRVAPQAISVENIEGNGPGTIKKISFPE 61
QY 61 GLPFKYVKDRVDEVDHTNFKYNSYIEGGPIDTLEKISNEIKIYATPDGGSILKISNKY 120
DB 62 GPFKYVKDRVDEVDHTNFKYNSYIEGGPIDTLEKISNEIKIYATPDGGSILKISNKY 121
QY 121 HTKGDEYKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
DB 122 HTKGNEHVKAQVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 15
Q9SC13 PRELIMINARY; PRT: 160 AA.
AC Q9SC13;
DT 01-MAY-2000 (TREMBLrel. 13, Created)
DT 01-MAY-2000 (TREMBLrel. 13, last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, last annotation update)
DE POLLEN ALLERGEN BETV1, ISOFORM A18.
GN BETV1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RA Friedl-Hajek R., Radauer C., Riodain G., Hoffmann-Sommergruber K.,
Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen."
RL EMBL; AJ006903; CA07318.1; -.
DR INTERPRO; IPR00916; -.
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV1; 1.
SQ SEQUENCE 160 AA; 17588 MM; 5715581E49A223E9 CRC64;

Query Match 97.6%; Score 799; DB 10; Length 160;
Best Local Similarity 96.2%; Pred. No. 1.8e-60;
Matches 153; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 GVFNNETETTSVIPARLFKAFILDDGNLFPRVAPQAISVENIEGNGPGTIKKISFPE 60
DB 2 GVFNNETETTSVIPARLFKAFILDDGNLFPRVAPQAISVENIEGNGPGTIKKISFPE 61
QY 61 GLPFKYVKDRVDEVDHTNFKYNSYIEGGPIDTLEKISNEIKIYATPDGGSILKISNKY 120
DB 62 GPFKYVKDRVDEVDHTNFKYNSYIEGGPIDTLEKISNEIKIYATPDGGSILKISNKY 121
QY 121 HTKGDEYKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
DB 122 HTKGNEHVKAQVKASKEMGETLLRAVESYLLAHSDAYN 160

Search completed: December 11, 2000, 10:11:10
Job time: 1767 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: December 11, 2000, 10:41:28 ; Search time 10.01 seconds
(without alignments)
507.465 Million cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GVFNYEFTTSVIPARLFK.....GETLLRAVESYLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 87993 seqs, 31947931 residues
Total number of hits satisfying chosen parameters: 87993

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	810	99.0	159	1	BV1A_BETVE
2	790	96.6	159	1	BV1J_BETVE
3	785	96.0	159	1	BV1E_BETVE
4	784	95.8	159	1	BV1F_BETVE
5	782	95.6	159	1	BV1D_BETVE
6	781	95.5	159	1	BV1C_BETVE
7	775	94.7	159	1	BV1L_BETVE
8	755	89.9	159	1	BV1M_BETVE
9	729	89.1	159	1	BV1B_BETVE
10	725	88.6	159	1	BV1K_BETVE
11	717	87.7	159	1	BV1G_BETVE
12	678	82.9	159	1	MPA6_ALINGL
13	635	77.6	159	1	MPA2_CARBE
14	621	75.9	159	1	MPA1_CARBE
15	610	74.6	159	1	MPA4_CORAV
16	500	61.1	160	1	PR01_PRUAV
17	458.5	56.1	158	1	MA11_MALDO
18	415.5	50.8	157	1	PR1_MEDSA
19	381	46.6	158	1	DRR3_PEA
20	377	46.1	158	1	AB18_PEA
21	376	46.0	158	1	SAM2_SOYBN
22	372	45.5	158	1	DRR4_PEA
23	369.5	45.2	159	1	DRR1_PEA
24	365	44.6	155	1	PR1_PHAUV
25	357.5	43.7	155	1	PR2_PHAUV
26	344	42.1	156	1	L18B_LUPLU
27	337.5	41.3	155	1	PRSI_SOLTU
28	337.5	41.3	155	1	PRS2_SOLTU
29	335	41.0	156	1	L18K_LUPLU
30	334.5	40.9	158	1	PR2_PECRC
31	327.5	40.0	157	1	AB17_PEA
32	322	39.4	154	1	RNS1_PANGI
33	311	38.0	155	1	PR11_PETCR

34	309.5	37.8	154	1	MPA6_APIGR
35	307.5	37.6	153	1	RNS2_PANGI
36	307	37.5	155	1	PR13_PETCR
37	296	36.2	157	1	RAP_TAROF
38	277.5	33.9	154	1	DAU1_DAUCA
39	240	29.3	158	1	PR1_ASPOF
40	88	10.8	615	1	DNK3_THETH
41	83	10.1	387	1	VR88_CAEEL
42	80.5	9.8	956	1	CB31_YEAST
43	79.5	9.7	936	1	ORP1_MOUSE
44	79	9.7	669	1	DAF1_CAEEL
45	79	9.7	726	1	NU84_YEAST

ALIGNMENTS

RESULT 1
ID BV1A_BETVE STANDARD: PRT: 159 AA.
AC P15494; 096369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DE 15-JUL-1998 (Rel. 36, Last annotation update)
DI MAJOR POLLEN ALLERGEN BET V 1-A (BET V I-A).
GN BETVIA OR BETVI.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 1-34.
RC TISSUE-POLLEN:
RX MEDLINE: 90005395.
RA Breiteneder H., Pettenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN:
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Breiteneder H., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL SEQUENCE.
RX MEDLINE: 91317572.
RA Elsayed S., Vlk H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v 1 and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE: 97102431.
RA Gajda E., Osmark P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neeuwen R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -I- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -I- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -I- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED

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CC -----
DR EMBL: X15877; CAB02153.1; -
DR EMBL: Z80098; CAB02153.1; -
DR EMBL: Z80099; CAB02154.1; -
DR EMBL: Z80104; CAB02159.1; -
DR PIR: S05376; S05376.
DR PDB: 1BTY; 12-AUG-97.
DR PDB: 1BVL; 17-SEP-97.
DR INTERPRO: IPR000916; -.
DR PFAM: PF00407; Bet_v-I; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS-BETVI; 1.
DR Pathogenesis-related protein; Allergen; Multigene family;
KW 3D-structure.
FT INIT_MET 0
FT VARIANT 62 0 F->L.
SQ SEQUENCE 159 AA; 17440 MW; 96E181194BBA83E6 CRC64;

Query Match 99.0%; Score 810; DB 1; Length 159;
Best Local Similarity 98.7%; Pred. No. 5e-64; 2; Indels 0; Gaps 0;
Matches 157; Conservative 0; Mismatches 2;

QY 1 GFVNTEFTTSYIPARLFKAFILDDGNLFPKVAPOAISSEVENISGNGPGTIKISFPE 60
DB 1 GFVNTEFTTSYIPARLFKAFILDDGNLFPKVAPOAISSEVENISGNGPGTIKISFPE 60
QY 61 GLPEKYKRDVDEVDHTNKYSYIEGGPIDTLEKISNEKIYATPDGGSILKISNKY 120
DB 61 GLPEKYKRDVDEVDHTNKYSYIEGGPIDTLEKISNEKIYATPDGGSILKISNKY 120
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 2
BYE BETVE STANDARD: PRT; 159 AA.
ID BYE BETVE STANDARD: PRT; 159 AA.
AC P43183;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-J (BET V I-J).
GN BETVI.
OS Betula verrucosa (white birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN.
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RA "isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
DR EMBL: X77271; CAB54487.1; -
DR HSSP: P15494; 1BTY.
DR INTERPRO: IPR000916; -.
DR PFAM: PF00407; Bet_v-I; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS-BETVI; 1.
DR Pathogenesis-related protein; Allergen; Multigene family.
KW INIT_MET 0
SQ SEQUENCE 159 AA; 17408 MW; D2AC26E9E7710ABD CRC64;

Query Match 96.6%; Score 790; DB 1; Length 159;
Best Local Similarity 95.0%; Pred. No. 2.8e-62;
Matches 151; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

QY 1 GFVNTEFTTSYIPARLFKAFILDDGNLFPKVAPOAISSEVENISGNGPGTIKISFPE 60
DB 1 GFVNTEFTTSYIPARLFKAFILDDGNLFPKVAPOAISSEVENISGNGPGTIKISFPE 60
QY 61 GLPEKYKRDVDEVDHTNKYSYIEGGPIDTLEKISNEKIYATPDGGSILKISNKY 120
DB 61 GLPEKYKRDVDEVDHTNKYSYIEGGPIDTLEKISNEKIYATPDGGSILKISNKY 120
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 3
BYE BETVE STANDARD: PRT; 159 AA.
ID BYE BETVE STANDARD: PRT; 159 AA.
AC P43178;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-E (BET V I-E).
GN BETVI.
OS Betula verrucosa (white birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN.
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RA "isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
DR EMBL: X77267; CA54483.1; -
DR HSSP: P15494; 1BTV.
DR INTERPRO: IPR000916; -
DR PFAM: PF00407; Bet_v_I; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETVI; 1.
KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17316 MW; 3E752543EDD1A08E CRC64;

Query Match
Best Local Similarity 96.0%; Score 785; DB 1; Length 159;
Matches 150; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

QY 1 GVNFYEETTSVIPARLFPAFLFDGDNLPKPAQPAISSVENISGNGGCTIKKISFPE 60
DB 1 GVNFYEETTSVIPARLFPAFLFDGDNLPKPAQPAISSVENISGNGGCTIKKISFPE 60
QY 61 GLPFKYKDVDEVDHNTNFYNSVIEGPGIGDTLEKISNEIKIVATPDGGSILKINKY 120
DB 61 GLPFKYKDVDEVDHNTNFYNSVIEGPGIGDTLEKISNEIKIVATPDGGSILKINKY 120
QY 121 HTKGDEHVKAQYKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHVKAQYKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 4
BTVI_BETVE STANDARD; PRT; 159 AA.
AC P43177;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-F/I (BET V I-F/I).
GN BETVI AND BETVI1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN 1
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN:
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC 1- SUBCELLULAR LOCATION: CYTOSOL;
CC 1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC 1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
CC EMBL: X77268; CA54484.1; -
CC EMBL: X77274; CA54480.1; -
CC HSSP: P15494; 1BTV.
CC INTERPRO: IPR000916; -
CC PFAM: PF00407; Bet_v_I; 1.
CC PRINTS: PR00634; BETALLERGEN.
CC PROSITE: PS00451; PATHOGENESIS_BETVI; 1.
DR PROSITE: PS00451; PATHOGENESIS_BETVI; 1.

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KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17421 MW; 6063F9C82A71165C CRC64;

Query Match
Best Local Similarity 95.8%; Score 784; DB 1; Length 159;
Matches 150; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

QY 1 GVNFYEETTSVIPARLFPAFLFDGDNLPKPAQPAISSVENISGNGGCTIKKISFPE 60
DB 1 GVNFYEETTSVIPARLFPAFLFDGDNLPKPAQPAISSVENISGNGGCTIKKISFPE 60
QY 61 GLPFKYKDVDEVDHNTNFYNSVIEGPGIGDTLEKISNEIKIVATPDGGSILKINKY 120
DB 61 GLPFKYKDVDEVDHNTNFYNSVIEGPGIGDTLEKISNEIKIVATPDGGSILKINKY 120
QY 121 HTKGDEHVKAQYKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHVKAQYKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT 5
BTVI_BETVE STANDARD; PRT; 159 AA.
AC P43177;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-D/H (BET V I-D/H).
GN BETVI AND BETVI1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN 1
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN:
RX MEDLINE: 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC 1- SUBCELLULAR LOCATION: CYTOSOL;
CC 1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC 1- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
CC EMBL: X77266; CA54482.1; -
CC EMBL: X77270; CA54486.1; -
CC HSSP: P15494; 1BTV.
CC INTERPRO: IPR000916; -
CC PFAM: PF00407; Bet_v_I; 1.
CC PRINTS: PR00634; BETALLERGEN.
CC PROSITE: PS00451; PATHOGENESIS_BETVI; 1.
KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT MET 0
SQ SEQUENCE 159 AA; 17418 MW; 8D1F38F8E56106FD CRC64;

Query Match
Best Local Similarity 95.6%; Score 782; DB 1; Length 159;

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Matches 150; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

QY 1 GFVNNETETTSTVTPARLRFKAFILLODDNLPFKYAPAPAISSVENISNGGPGTIKKSFE 60
   |||||
DB 1 GFVNEIETTSTVTPARLRFKAFILLODDNLPKYPAPAISSVENIEANGGPGTIKKINFE 60
   |||||

QY 61 GFPEKVKRQVDEVDHTNFKYNSVYEGGPGIDTLEKISNEIKIYATPPGGSTLKISNKY 120
   |||||
DB 61 GFPEKVKRQVDEVDHTNFKYNSVYEGGPGVGTLEKISNEIKIYATPPGGCVLKISNKY 120
   |||||

QY 121 HTKGDHEVKAEDYKASKEMGETLLRAVESYLLAHSDAYN 159
   |||||
DB 121 HTKGNHEVKAEDYKASKEMGETLLRAVESYLLAHSDAYN 159
   |||||

RESULT 6
BV1G-BEYVE
AD BV1G-BEYVE STANDARD; PRT; 159 AA.
ID P43180;
DC 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET v 1-G (BET v 1-G).
GN BEY1G.
OS Betula verrucosa (White Birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE=POLLEN.
RA MEDLINE; 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber R.,
RA Schöner O., Kraft D., Breiteneder H., Plattenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isforms of Bet v 1, the major birch pollen allergen, analyzed by
RT ligand chromatography, mass spectrometry, and cDNA cloning."
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BEY1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
CC EMBL; X77269; CAA54485.1; -.
DR HSSP; P15494; 1BTV.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS.BEYV1; 1.
KW Pathogenesis-related protein; Allergen; Multigene family.
FT INIT_MDT 0
FT FT 0
SQ SEQUENCE 159 AA; 17420 MW; BBAEBDDCE24IDB CRC64;

Query Match 95.5%; Score 781; DB 1; Length 159;
Best Local Similarity 93.7%; Pred. No. 1.7e-61;
Matches 149; Conservative 6; Mismatches 4; Indels 0; Gaps 0;

QY 1 GFVNNETETTSTVTPARLRFKAFILLODDNLPFKYAPAPAISSVENISNGGPGTIKKSFE 60
   |||||
DB 1 GFVNEIETTSTVTPARLRFKAFILLODDNLPKYPAPAISSVENIEANGGPGTIKKINFE 60
   |||||

QY 61 GFPEKVKRQVDEVDHTNFKYNSVYEGGPGIDTLEKISNEIKIYATPPGGSTLKISNKY 120
   |||||
DB 61 GFPEKVKRQVDEVDHTNFKYNSVYEGGPGVGTLEKISNEIKIYATPPGGCVLKISNKY 120
   |||||

QY 121 HTKGDHEVKAEDYKASKEMGETLLRAVESYLLAHSDAYN 159
   |||||
DB 121 HTKGNHEVKAEDYKASKEMGETLLRAVESYLLAHSDAYN 159
   |||||

Query Match 95.5%; Score 781; DB 1; Length 159;
Best Local Similarity 93.7%; Pred. No. 1.7e-61;
Matches 149; Conservative 6; Mismatches 4; Indels 0; Gaps 0;

QY 1 GFVNNETETTSTVTPARLRFKAFILLODDNLPFKYAPAPAISSVENISNGGPGTIKKSFE 60
   |||||
DB 1 GFVNEIETTSTVTPARLRFKAFILLODDNLPKYPAPAISSVENIEANGGPGTIKKINFE 60
   |||||

QY 61 GFPEKVKRQVDEVDHTNFKYNSVYEGGPGIDTLEKISNEIKIYATPPGGSTLKISNKY 120
   |||||
DB 61 GFPEKVKRQVDEVDHTNFKYNSVYEGGPGVGTLEKISNEIKIYATPPGGCVLKISNKY 120
   |||||

QY 121 HTKGDHEVKAEDYKASKEMGETLLRAVESYLLAHSDAYN 159
   |||||
DB 121 HTKGNHEVKAEDYKASKEMGETLLRAVESYLLAHSDAYN 159
   |||||

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DB      61 GEPFYVYVDROVEDVHTNFKNYNSVIEGPGWDTLEKISNEIKIIVATPDGGCVLKISKMY 120
QY      121 HTKGDEHYAKAFQVKASKEMGETLLRAVESYLLAHSDAYN 159
        |||:|||||||:|||||||:|||||||:|||||||:|||||||:|||||||:|||||||:|||||||:
Db      121 HTRGNHEVKAEGOVKASKEMGETLLRAVESYLLAHSDAYN 159

RESULT
7
BYIL_BETVE / STANDARD: PRI: 159 AA.
ID BYIL_BETVE
AC P43185;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-L (BET V I-L).
GN BETVL.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
[1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN.
RX MEDLINE; 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hofman-Sommergruber K.,
RA Scheiner O., Kleit D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RA "isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1 SUBCELLULAR LOCATION: CYTOSOLSMTC.
CC -1 DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1 SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
-----
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CC or send an email to license@isb-sib.ch).
-----
DR EMBL; X77273; CAA54489.1; -.
DR HSSP; P15494; IBTV.
DR INTERPRO: IPR000916; -.
DR PFAM: PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV_1.
DR Pathogenesis-related protein; Allergen; Multigene family.
KW INT_MET 0
FT INIT MET 0 BY SIMILARITY.
SQ SEQUENCE 159 AA; 17408 MW; DE85F4ACC647BE0D CRC64;

Query Match 94.7%; Score 775; DB 1; Length 159;
Best Local Similarity 93.1%; Pred. No. 5.6e-61; Indels 0; Gaps 0;
Matches 148; Conservative 5; Mismatches 6;

QY 1 GFVNNETSTTSVIPARLFKAFILDGNIJLVFPVAPOAISSVENISGNGPGTIKKISPPE 60
    |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db 1 GFVENETEATSVITPARAEKAFILDGKTLKPVAPOAISSVENINGNGPGTIKKINPPE 60

QY 61 GLPEFYVYVDROVEDVHTNFKNYNSVIEGPGDTLEKISNEIKIIVATPDGGSIKLISKMY 120
    |::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|::|
Db 61 GEPEFYVYVDROVEDVHTNFKNYNSVIEGPGVDTLEKISNEIKIIVATPDGGCVLKISKMY 120

QY 121 HTKGDEHYAKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
    |||:|||||||:|||||||:|||||||:|||||||:|||||||:|||||||:|||||||:|||||||:
Db 121 HTRGNHEVKAEGOVKASKEMGETLLRAVESYLLAHSDAYN 159

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BV1M_BETVE          STANDARD;          PRT;          159 AA.
ID BV1M_BETVE
AC P43186;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DE MAJOR POLLEN ALLERGEN BET V 1-M/N (BET V I-M/N).
GN BV1M AND BETV1N.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN;
RX MEDLINE: 95155322.
RA Sweboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pilteneuer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
CC EMBL: X81972; CAA57497.1; -
CC DR EMBL: X82028; CAA57550.1; -
CC DR HSSP: P15494; 1BTV.
CC DR INTERPRO: IPR000916; -
CC DR PFAM: PF00407; Bet_v_1; 1.
CC DR PRINTS: PR00634; BETALLERGEN.
CC DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
CC KW pathogenesis-related protein; Allergen; Multigene family.
CC FT INIT MET 0
CC FT SEQUENCE 159 AA; 17391 MW; ABA014f8849985E2 CRC64;
SQ
Query Match 89.9%; Score 735; DB 1; Length 159;
Best local Similarity 88.7%; Pred. No. 1,7e-57;
Matches 141; Conservative 8; Mismatches 10; Indels 0; Gaps 0;
QY 1 GVNVEETETTSVIPARLFRAFLFDGDNLFPKVAPQAISSEVENISGNGGPGTIKTSFPE 60
DB 1 GVNVEETETTSVIPARLFRAFLFDGDNLFPKVAPQAISSEVENISGNGGPGTIKTSFPE 60
QY 61 GLPFKVKRVDVDHRTNFKYNSVIEGPIGDTLEKISNEIKIVATPPDGSILKTSNKY 120
DB 61 GLPFKVKRVDVDHRTNFKYNSVIEGPIGDTLEKISNEIKIVATPPDGSILKTSNKY 120
QY 121 HTKGDEHVKAEQYKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHVKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159
RESULT 9
ID BV1M_BETVE          STANDARD;          PRT;          159 AA.
AC P45431;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-B (BET V I-B).
DE MAJOR POLLEN ALLERGEN BET V 1-B (BET V I-B).

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GN BETV1B.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN;
RX MEDLINE: 95155322.
RA Sweboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pilteneuer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
CC -----
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CC -----
CC EMBL: X77200; CAA54421.1; -
CC DR HSSP: P15494; 1BTV.
CC DR INTERPRO: IPR000916; -
CC DR PFAM: PF00407; Bet_v_1; 1.
CC DR PRINTS: PR00634; BETALLERGEN.
CC DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
CC KW pathogenesis-related protein; Allergen; Multigene family.
CC FT INIT MET 0
CC FT SEQUENCE 159 AA; 17406 MW; ECC8D391E0C96267 CRC64;
SQ
Query Match 89.1%; Score 729; DB 1; Length 159;
Best local Similarity 88.1%; Pred. No. 5,8e-57;
Matches 140; Conservative 8; Mismatches 11; Indels 0; Gaps 0;
QY 1 GVNVEETETTSVIPARLFRAFLFDGDNLFPKVAPQAISSEVENISGNGGPGTIKTSFPE 60
DB 1 GVNVEETETTSVIPARLFRAFLFDGDTLIPKVAPOAISSEVENISGNGGPGTIKTSFPE 60
QY 61 GLPFKVKRVDVDHRTNFKYNSVIEGPIGDTLEKISNEIKIVATPPDGSILKTSNKY 120
DB 61 GSFFKIVKRYVDVDAHNFRTYSMTIEGALGDTLEKICNEIKIVATPPDGSILKTSNKY 120
QY 121 HTKGDEHVKAEQYKASKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDEHMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159
RESULT 10
ID BV1K_BETVE          STANDARD;          PRT;          159 AA.
AC P43184;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-K (BET V I-K).
DE MAJOR POLLEN ALLERGEN BET V 1-K (BET V I-K).
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN;

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RX MEDLINE: 95155322.
RA Sweboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Schneider O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Anorn H., Breitenbach M.,
RT "isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
CC EMBL: X77272; CAAS4488.1; -.
CC HSSP: P15494; IRTV.
CC INTERPRO: IPR000916; -.
CC PFAM: PF00407; Bet_v_1; 1.
CC PRINTS: PR00634; BETALLERGEN.
CC PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
CC Pathogenesis-related protein; Allergen; Multigene family.
CC INIT MET 0
CC SEQUENCE 159 AA; 17392 MW; AAF9E6F197C96517 CRC64;

Query Match 88.6%; Score 725; DB 1; Length 159;
Best local Similarity 87.4%; Pred. No. 13e-56;
Matches 139; Conservative 9; Mismatches 11; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILDGDLFPKVAPOAISSEVENISGNGPGTIKISFPE 60
DB 1 GFVNSEETTSYIPARLFKAFILFEGDILLPKVAPOAISSEVENIEGNGPGTIKITEPE 60
QY 61 GLPEFYKRVDEVDHNTKRYNSVIEGGPIGDTLEKISNEIKYVAPDGGSLIKISKY 120
DB 61 GSPFKYKRVDEVDHNTKRYNSVIEGGPIGDTLEKISNEIKYVAPDGGSLIKISKY 120
QY 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEKAEHMKAIKEKGALLRAVESYLLAHSDAYN 159

RESULT 11
BVL1 BETVE
ID BVL1 BETVE STANDARD: PRT; 159 AA.
AC P43176;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-C (BET V I-C).
GN BETV1C.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE-POLLEN;
RX MEDLINE: 95155322.
RA Sweboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Schneider O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Anorn H., Breitenbach M.,
RT "isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
CC -1- SUBCELLULAR LOCATION: CYTOPLASMIC.

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CC -1- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
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CC -----
CC EMBL: X77265; CAAS4481.1; -.
CC HSSP: P15494; IRTV.
CC INTERPRO: IPR000916; -.
CC PFAM: PF00407; Bet_v_1; 1.
CC PRINTS: PR00634; BETALLERGEN.
CC PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
CC Pathogenesis-related protein; Allergen; Multigene family.
CC INIT MET 0
CC SEQUENCE 159 AA; 17383 MW; AAF9A95A7C96517 CRC64;

Query Match 87.7%; Score 717; DB 1; Length 159;
Best local Similarity 86.8%; Pred. No. 6.4e-56;
Matches 138; Conservative 9; Mismatches 12; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILDGDLFPKVAPOAISSEVENISGNGPGTIKISFPE 60
DB 1 GFVNSEETTSYIPARLFKAFILFEGDILLPKVAPOAISSEVENIEGNGPGTIKITEPE 60
QY 61 GLPEFYKRVDEVDHNTKRYNSVIEGGPIGDTLEKISNEIKYVAPDGGSLIKISKY 120
DB 61 GSPFKYKRVDEVDHNTKRYNSVIEGGPIGDTLEKISNEIKYVAPDGGSLIKISKY 120
QY 121 HTKGDHEKAEQVAKSKEMGETLLRAVESYLLAHSDAYN 159
DB 121 HTKGDHEKAEHMKAIKEKGALLRAVESYLLAHSDAYN 159

RESULT 12
MPG1 ALNGL
ID MPG1 ALNGL STANDARD: PRT; 159 AA.
AC P38948;
DT 01-FEB-1995 (Rel. 31, Created)
DT 01-FEB-1995 (Rel. 31, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN ALN G 1 (ALN G I).
OS Alnus glutinosa (Alder).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Alnus.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN;
RX MEDLINE: 93094476.
RA Breiteneder H., Ferreira F., Reikensrofer A., Duchene M.,
RA Valenta R., Hoffmann-Sommergruber K., Ebner C., Breitenbach M.,
RA Kraft D., Schneider O.,
RT "Complementary DNA cloning and expression in Escherichia coli of Aln
RT g 1, the major allergen in pollen of alder (Alnus glutinosa).";
RL J. Allergy Clin. Immunol. 90:909-917(1992).
CC -1- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
CC -----
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CC EMBL: S50897; AAB34437.1; -
 CC HSSP: P15494; 1BTY.
 DR INTERPRO: IPR000916; -
 DR PFAM: PF00407; Bel_v_I; 1.
 DR PRINTS: PR00634; BETALLERGEN.
 DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
 KW Allergen: Pathogenesis-related protein.
 FT INIT_MET 0
 FT SEQUENCE 159 AA; 17207 MW; 8DCB96C680688A6 CRC64;

Query Match 82.9%; Score 678; DB 1; Length 159;
 Best Local Similarity 80.5%; Pred. No. 1.6e-52;
 Matches 18; Conservative 12; Mismatches 19; Indels 0; Gaps 0;

QY 1 GVNFEYETTSVIPARLFKAFILDDNLFPPKAPQAISSEVENISNGGPGTIIKISFPE 60
 DB 1 GVNFEYETTSVIPARLFKAFILDDNLFPPKAPQAISSEVENISNGGPGTIIKISFPE 60
 QY 61 GLPFIYKNDVDEVDHTNFKYNTSVIEGPGIGTLEKISNEIKIVATPDGGSILKISNKY 120
 DB 61 GSPFKYKKEVEVDHTNFKYNTSVIEGPGIGTLEKISNEIKIVATPDGGSILKISNKY 120
 QY 121 HTKGDEHVKAEQYKASKEMETLLRAVESYLLAHSDAYN 159
 DB 121 HTKGDEHVKAEQYKASKEMETLLRAVESYLLAHSDAYN 159

RESULT 13
 MPAL_CARBE STANDARD; PRT; 159 AA.

AC P38950;
 DT 01-FEB-1995 (Rel. 31, Created)
 DT 01-FEB-1995 (Rel. 31, Last sequence update)
 DT 01-NOV-1997 (Rel. 35, Last annotation update)
 DE MAJOR POLLEN ALLERGEN CAR B 1, ISOFORM 2 (CAR B I).
 OS Carpinus betulus (Hornbeam).
 OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
 OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
 OC Fagales; Betulaceae; Carpinus.
 RN [1]

RP SEQUENCE FROM N.A.
 RC TISSUE-POLLEN;
 RX MEDLINE: 92293162.
 RA Nedergaard Larsen J., Stroeman P., Ipsen H.;
 RT "PCR based cloning and sequencing of isogenes encoding the tree
 RT pollen major allergen Car b I from Carpinus betulus, hornbeam.";
 RL Mol. Immunol. 29:703-711(1992).
 CC -1- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
 CC AMERICA AND USSR.
 CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
 CC PROTEIN.

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CC EMBL: X66933; CAA47367.1; -
 CC HSSP: P15494; 1BTY.
 DR INTERPRO: IPR000916; -
 DR PFAM: PF00407; Bel_v_I; 1.
 DR PRINTS: PR00634; BETALLERGEN.
 DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
 KW Allergen: Pathogenesis-related protein; Multigene family.
 FT INIT_MET 0
 FT SEQUENCE 159 AA; 17356 MW; 7D55C78195C1C551 CRC64;

Query Match 77.6%; Score 635; DB 1; Length 159;
 Best Local Similarity 74.8%; Pred. No. 9.1e-49;
 Matches 119; Conservative 20; Mismatches 20; Indels 0; Gaps 0;

QY 1 GVNFEYETTSVIPARLFKAFILDDNLFPPKAPQAISSEVENISNGGPGTIIKISFPE 60
 DB 1 GVNFEYETTSVIPARLFKAFILDDNLFPPKAPQAISSEVENISNGGPGTIIKISFPE 60
 QY 61 GLPFIYKNDVDEVDHTNFKYNTSVIEGPGIGTLEKISNEIKIVATPDGGSILKISNKY 120
 DB 61 GSPFKYKKEVEVDHTNFKYNTSVIEGPGIGTLEKISNEIKIVATPDGGSILKISNKY 120
 QY 121 HTKGDEHVKAEQYKASKEMETLLRAVESYLLAHSDAYN 159
 DB 121 HANGYHEVNAEMKAGAKEMAKELLRAVESYLLAHSDAYN 159

RESULT 14
 MPAL_CARBE STANDARD; PRT; 159 AA.

AC P38949;
 DT 01-FEB-1995 (Rel. 31, Created)
 DT 01-FEB-1995 (Rel. 31, Last sequence update)
 DT 01-NOV-1997 (Rel. 35, Last annotation update)
 DE MAJOR POLLEN ALLERGEN CAR B 1, ISOFORMS 1A AND 1B (CAR B I).
 OS Carpinus betulus (Hornbeam).
 OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
 OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
 OC Fagales; Betulaceae; Carpinus.
 RN [1]

RP SEQUENCE FROM N.A.
 RC TISSUE-POLLEN;
 RX MEDLINE: 92293162.
 RA Nedergaard Larsen J., Stroeman P., Ipsen H.;
 RT "PCR based cloning and sequencing of isogenes encoding the tree
 RT pollen major allergen Car b I from Carpinus betulus, hornbeam.";
 RL Mol. Immunol. 29:703-711(1992).
 CC -1- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
 CC AMERICA AND USSR.
 CC -1- SIMILARITY: THE SEQUENCE SHOWN IS THAT OF ISOFORM 1A.
 CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
 CC PROTEIN.

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CC EMBL: X66932; CAA47366.1; -
 CC HSSP: P15494; 1BTY.
 DR INTERPRO: IPR000916; -
 DR PFAM: PF00407; Bel_v_I; 1.
 DR PRINTS: PR00634; BETALLERGEN.
 DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.
 KW Allergen: Pathogenesis-related protein; Multigene family.
 FT INIT_MET 0
 FT VARIANT 37
 FT VARIANT 62
 FT VARIANT 132
 FT SEQUENCE 159 AA; 17271 MW; 21DCD17A38851E8E CRC64;

Query Match 75.9%; Score 621; DB 1; Length 159;
 Best Local Similarity 73.0%; Pred. No. 1.5e-47;
 Matches 116; Conservative 21; Mismatches 22; Indels 0; Gaps 0;

QY 1 GVNFEYETTSVIPARLFKAFILDDNLFPPKAPQAISSEVENISNGGPGTIIKISFPE 60

Db 1 GVENNEAEPTSVIPARLFKSYVLDDDKLIPKVAPOATSVENGVGGGPGTINKNITFAE 60
QY 61 GLPEFYKRVDEVDHNTNKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKSNKY 120
Db 61 GLPEFYKRVDEVDHNTNKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKSNKY 120
QY 121 HTKGDEHVAIKQYKASKEMGETLLRAVESYLLAHSADAYN 159
Db 121 HAKGYHEVNAEKKAEMAKERLLRAVESTYLLAHSAYN 159

RESULT 15
MPAA_CORAV STANDARD: PRT; 159 AA.

ID MPAA_CORAV STANDARD: PRT; 159 AA.
AC 008407:
DT 01-OCT-1994 (Rel. 30, Created)
DT 01-FEB-1995 (Rel. 31, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE MAJOR POLLEN ALLERGEN COR A 1, ISOFORMS 5, 6, 11 AND 16 (COR A 1).
OS Corylus avellana (European hazel).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Corylus.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN:
RX MEDLINE; 93185652.
RA Breiteneder H., Ferreira F., Hoffmann-Sommergruber K., Ebner C.,
RA Breitenbach M., Rumpold H., Kraft D., Scheiner O.;
RT "Four recombinant isoforms of Cor a 1, the major allergen of hazel
RT pollen, show different IGE-binding properties.";
RL Eur. J. Biochem. 212:355-362(1993).
CC -1- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR. THE COR A 1 ISOFORMS DISPLAY DIFFERENT ANTIGENIC
CC AND ALLERGENIC PROPERTIES.
CC -1- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CLONE COR A 1/5.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; X70999; CAA50327.1; -;
DR EMBL; X71000; CAA50328.1; -;
DR EMBL; X70997; CAA50325.1; -;
DR EMBL; X70998; CAA50326.1; -;
DR PIR; S30053; S30053.
DR HSSP; P15494; 1BTV.
DR INTERPRO; IPR000916; -;
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV1; 1.
KW Allergen; Pathogenesis-related protein; Multigene family.
FT INT_MET 0
FT VARIANT 7
FT VARIANT 10
FT VARIANT 14
FT VARIANT 45
FT VARIANT 80
FT VARIANT 100
FT VARIANT 113
FT VARIANT 133
SQ SEQUENCE 159 AA; 17381 MW; E0F5E2A218E8D768 CRC64;

Query Match 74.6%; Score 610; DB 1; Length 159;
Best focal Similarity 71.7%; Pred. No. 1.4e-46;

Matches 114; Conservative 22; Mismatches 23; Indels 0; Gaps 0;
QY 1 GVENNETENTSVIPARLFKAPFLDGDNLFPKVAPOATSVENGVGGGPGTINKNITFAE 60
Db 1 GVENNETENTSVIPARLFKSYVLDDDKLIPKVAPOATSVENGVGGGPGTINKNITFAE 60
QY 61 GLPEFYKRVDEVDHNTNKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKSNKY 120
Db 61 GLPEFYKRVDEVDHNTNKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKSNKY 120
QY 121 HTKGDEHVAIKQYKASKEMGETLLRAVESYLLAHSADAYN 159
Db 121 HAKGYHEVNAEKKAEMAKERLLRAVESTYLLAHSAYN 159

Search completed: December 11, 2000, 10:43:18
Job time: 110 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: December 11, 2000, 10:41:14 ; Search time 18.74 Seconds
(without alignments)
792.235 Million cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GFVNETETTSVIPARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table:
BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 297973 seqs, 93374136 residues
Total number of hits satisfying chosen parameters: 297973

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :
1: SPTRMBL_14:*
2: sp.archaea:*
3: sp.fungi:*
4: sp.human:*
5: sp.invertebrate:*
6: sp.mammal:*
7: sp.mhc:*
8: sp.organelle:*
9: sp.phage:*
10: sp.plant:*
11: sp.todent:*
12: sp.virus:*
13: sp.vertebrate:*
14: sp.unclassified:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	809	98.9	160	10	096366 betula verr
2	807	98.7	160	10	024642 betula verr
3	805	98.4	160	10	042499 betula verr
4	803	98.2	160	10	023752 betula verr
5	802	98.0	160	10	096371 betula verr
6	801	97.9	160	10	096371 betula verr
7	800	97.8	160	10	096370 betula verr
8	799	97.7	160	10	096370 betula verr
9	799	97.7	160	10	096370 betula verr
10	798	97.6	160	10	096365 betula verr
11	798	97.6	160	10	096365 betula verr
12	796	97.3	160	10	096368 betula verr
13	796	97.3	160	10	096368 betula verr
14	795	97.2	160	10	096368 betula verr
15	794	97.1	160	10	096368 betula verr
16	793	96.9	160	10	096367 betula verr
17	793	96.9	160	10	096367 betula verr
18	793	96.9	160	10	096367 betula verr
19	791	96.7	160	10	023754 betula verr

20	790	96.6	160	10	039426 betula verr
21	788	96.3	160	10	023751 betula verr
22	787	96.2	160	10	096372 betula verr
23	784	95.8	160	10	096372 betula verr
24	783	95.7	160	10	096372 betula verr
25	782	95.6	160	10	096372 betula verr
26	777	95.0	160	10	096372 betula verr
27	770	94.1	160	10	096372 betula verr
28	768	93.9	160	10	096372 betula verr
29	746	91.2	160	10	096372 betula verr
30	739	90.3	160	10	096372 betula verr
31	738	90.2	160	10	096372 betula verr
32	736	90.0	160	10	096372 betula verr
33	735	89.9	160	10	096372 betula verr
34	731	89.4	160	10	096372 betula verr
35	702	85.8	160	10	096372 betula verr
36	698	85.3	160	10	096372 betula verr
37	695	85.0	160	10	096372 betula verr
38	695	85.0	160	10	096372 betula verr
39	683	83.5	160	10	096372 betula verr
40	659	80.6	160	10	096372 betula verr
41	640	78.2	160	10	096372 betula verr
42	639	78.1	160	10	096372 betula verr
43	638	78.0	160	10	096372 betula verr
44	629	76.9	160	10	096372 betula verr
45	622	76.0	160	10	096503 carpinus be

ALIGNMENTS

RESULT 1
ID 096366 PRELIMINARY; PRT; 160 AA.
AC 096366;
DT 01-FEB-1997 (TREMBLrel. 02, Created)
DT 01-FEB-1997 (TREMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN OBTAINED FROM ALLERCON, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DBJ databases.
CC -! SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED PROTEIN.
DR EMBL: Z80101; CAB02156.1; -.
DR HSSP: P13494; IRTV.
DR MENDEL: 30889; setve;1174;30889.
DR INTERPRO: IPR000916; -.
DR PIR: P00407; bet.v.1; 1.
DR PRINTS: PR00634; BETALLERGEN.
DR PROSITE: PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM: PD000531; -. 1.
KW pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17557 MW; B2174110A9588AD4 CRC64;
Query Match 98.9%; Score 809; DB 10; Length 160;
Best Local Similarity 98.1%; Pred. No. 8.4e-62;
Matches 156; Conservative 1; Mismatches 2; Indels 0; Gaps 0;
QY 1 GFVNETETTSVIPARLFKATLDGDNLFPPVAPQAISSVFNISGNGSPGRTIKKISPE 60
DB 2 GFVNETETTSVIPARLFKATLDGDNLFPPVAPQAISSVFNISGNGSPGRTIKKISPE 61
QY 61 GPFYKVRDVEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 120
DB 62 GPFYKVRDVEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 121

QY 121 HTKGDHEVKAQOVKASKEMGETLLRAVESYLLAHSDAYN 159
 |||||||||||||||||||||||||||||||||||||||
 Db 122 HTKGDHEVKAQOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 2

ID 024642 PRELIMINARY; PRT: 160 AA.

AC 024642; 01-JAN-1998 (TREMBlrel. 05, Created)

DT 01-JAN-1998 (TREMBlrel. 05, Last sequence update)

DT 01-JUN-2000 (TREMBlrel. 14, Last annotation update)

DE POLLEN ALLERGEN BETV1.

GN BETV1.

OS Betula verrucosa (White birch) (Betula pendula).

OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;

OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;

OC Betulaceae; Betula.

CC [1]

RP SEQUENCE FROM N.A.

RC TISSUE-POLLEN;

RA Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,

RI Riordan G., Scheiner O., Breiteneder H.;

RL Submitted (OCT-1997) to the EMBL/GenBank/DBJ databases.

CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED

CC PROTEIN.

DR EMBL: AJ002109; CAA05189.1; -

DR EMBL: AJ002107; CAA05187.1; -

DR HSSP: P15494; 1BTV.

DR MENDEL: 24383; Betve; 1174; 24383.

DR INTERPRO: IPR000916; -

DR PFAM: PF00407; Bet_v1; 1.

DR PRINTS: PR00634; BETALLERGEN.

DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.

DR PRODOM: PD000531; -; 1.

KW Pathogenesis-related protein.

SQ SEQUENCE 160 AA; 17589 MW; D8A04110BD1CDAC0 CRC64;

Query Match 98.7%; Score 807; DB 10; Length 160;

Best Local Similarity 98.1%; Pred. No. 1.2e-61;

Matches 156; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 GVFNYETETTVIPARLFKFAFIIDGDLFPKVAPOAISSVENISNGGPGTIKKISFPE 60

Db 2 GVNFETETTVIPARLFKFAFIIDGDLFPKVAPOAISSVENISNGGPGTIKKISFPE 61

QY 61 GLPEKRYKDRVDEVDHTNFKNYSVIEGPGIDGLEKISNEIKIVATPDGGSILKISNKY 120

Db 62 GFPEKRYKDRVDEVDHTNFKNYSVIEGPGMGDTLEKISNEIKIVATPDGGSILKISNKY 121

QY 121 HTKGDHEVKAQOVKASKEMGETLLRAVESYLLAHSDAYN 159

Db 122 HTKGDHEVKAQOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 3

ID 042499 PRELIMINARY; PRT: 160 AA.

AC 042499; 01-NOV-1996 (TREMBlrel. 01, Created)

DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)

DT 01-JUN-2000 (TREMBlrel. 14, Last annotation update)

DE MAJOR ALLERGEN BET V 1.

GN BETV1.

OS Betula verrucosa (White birch) (Betula pendula).

OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;

OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;

OC Betulaceae; Betula.

CC [1]

RP SEQUENCE FROM N.A.

RC TISSUE-LEAF;

RA Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,

RI Riordan G., Scheiner O., Breiteneder H.;

RL Submitted (OCT-1997) to the EMBL/GenBank/DBJ databases.

CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED

CC PROTEIN.

DR EMBL: AJ002108; CAA05188.1; -

DR HSSP: P15494; 1BTV.

DR MENDEL: 26841; Betve; 1174; 26841.

DR INTERPRO: IPR000916; -

DR PFAM: PF00407; Bet_v1; 1.

DR PRINTS: PR00634; BETALLERGEN.

DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.

DR PRODOM: PD000531; -; 1.

RA Hoffmann-Sommergruber K.;

RL Submitted (MAY-1996) to the EMBL/GenBank/DBJ databases.

CC [2]

RP SEQUENCE FROM N.A.

RC TISSUE-POLLEN;

RA Friedl-Hajek R., Radauer C., O'Riordan G., Hoffmann-Sommergruber K.,

RI Leberl K., Scheiner O., Breiteneder H.;

RL "New Betv1 isoforms including a naturally occurring truncated form of

the protein derived from Austrian birch pollen."

Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.

CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED

CC PROTEIN.

DR EMBL: Z72432; CAA96541.1; -

DR EMBL: Z72429; CAA96538.1; -

DR HSSP: P15494; 1BTV.

DR MENDEL: 30817; Betve; 1174; 30817.

DR INTERPRO: IPR000916; -

DR PFAM: PF00407; Bet_v1; 1.

DR PRINTS: PR00634; BETALLERGEN.

DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.

DR PRODOM: PD000531; -; 1.

KW Pathogenesis-related protein.

SQ SEQUENCE 160 AA; 17541 MW; E3950410AFB85096 CRC64;

Query Match 98.4%; Score 805; DB 10; Length 160;

Best Local Similarity 98.1%; Pred. No. 1.8e-61;

Matches 156; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 GVFNYETETTVIPARLFKFAFIIDGDLFPKVAPOAISSVENISNGGPGTIKKISFPE 60

Db 2 GVNFETETTVIPARLFKFAFIIDGDLFPKVAPOAISSVENISNGGPGTIKKISFPE 61

QY 61 GLPEKRYKDRVDEVDHTNFKNYSVIEGPGIDGLEKISNEIKIVATPDGGSILKISNKY 120

Db 62 GFPEKRYKDRVDEVDHTNFKNYSVIEGPGIDGLEKISNEIKIVATPDGGSILKISNKY 121

QY 121 HTKGDHEVKAQOVKASKEMGETLLRAVESYLLAHSDAYN 159

Db 122 HTKGDHEVKAQOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 4

ID 023752 PRELIMINARY; PRT: 160 AA.

AC 023752; 01-JAN-1998 (TREMBlrel. 05, Created)

DT 01-JAN-1998 (TREMBlrel. 05, Last sequence update)

DT 01-JUN-2000 (TREMBlrel. 14, Last annotation update)

DE POLLEN ALLERGEN BETV1.

GN BETV1.

OS Betula verrucosa (White birch) (Betula pendula).

OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;

OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;

OC Betulaceae; Betula.

CC [1]

RP SEQUENCE FROM N.A.

RC TISSUE-POLLEN;

RA Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,

RI Riordan G., Scheiner O., Breiteneder H.;

RL Submitted (OCT-1997) to the EMBL/GenBank/DBJ databases.

CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED

CC PROTEIN.

DR EMBL: AJ002108; CAA05188.1; -

DR HSSP: P15494; 1BTV.

DR MENDEL: 26841; Betve; 1174; 26841.

DR INTERPRO: IPR000916; -

DR PFAM: PF00407; Bet_v1; 1.

DR PRINTS: PR00634; BETALLERGEN.

DR PROSITE: PS00451; PATHOGENESIS_BETV1; 1.

DR PRODOM: PD000531; -; 1.

KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17523 MW; 69B110BBD1ADD CRC64;

Query Match 98.2%; Score 803; DB 10; Length 160;
Best Local Similarity 98.1%; Pred. No. 2.7e-61;
Matches 156; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 GVFNVTETTSVIPARLTKAFILDDGDLFPKAPQAISSEVENISNGGPGTIKISFPE 60
DB 2 GVFNVTETTSVIPARLTKAFILDDGDLFPKAPQAISSEVENISNGGPGTIKISFPE 61
QY 61 GPEFKYKRVDEVDTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 120
DB 62 GPEFKYKRVDEVDTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 5
Q96371 PRELIMINARY; PRT; 160 AA.

AC Q96371;
DT 01-FEB-1997 (TREMBLrel. 02, Created)
DT 01-FEB-1997 (TREMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (white birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN OBTAINED FROM ALLERGEN, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/Genbank/DBJ databases.
CC -! SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
EMBL: 280106; CAB02161.1; -.
DR HSSP; P15494; 1BTV.
DR MENDEL; 30893; Betve;1174;30893.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM; PD000531; -. 1.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17670 MW; 69B4410BBA6A1AC6 CRC64;

Query Match 98.0%; Score 802; DB 10; Length 160;
Best Local Similarity 98.1%; Pred. No. 3.3e-61;
Matches 156; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 GVFNVTETTSVIPARLTKAFILDDGDLFPKAPQAISSEVENISNGGPGTIKISFPE 60
DB 2 GVFNVTETTSVIPARLTKAFILDDGDLFPKAPQAISSEVENISNGGPGTIKISFPE 61
QY 61 GPEFKYKRVDEVDTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 120
DB 62 GPEFKYKRVDEVDTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 6
Q9SCH8 PRELIMINARY; PRT; 160 AA.
ID Q9SCH8;
AC Q9SCH8;

DT 01-MAY-2000 (TREMBLrel. 13, Created)
DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BETVI, ISOFORM AT50.

GN BETVI.
OS Betula verrucosa (white birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
of the protein derived from Austrian birch pollen.";
RL Mol. Immunol. 36:639-645(1999).
DR EMBL; AJ006911; CAA07326.1; -.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ SEQUENCE 160 AA; 17631 MW; DBA9575C4C393DA0 CRC64;

Query Match 97.9%; Score 801; DB 10; Length 160;
Best Local Similarity 96.9%; Pred. No. 4e-61;
Matches 154; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 GVFNVTETTSVIPARLTKAFILDDGDLFPKAPQAISSEVENISNGGPGTIKISFPE 60
DB 2 GVFNVTETTSVIPARLTKAFILDDGDLFPKAPQAISSEVENISNGGPGTIKISFPE 61
QY 61 GPEFKYKRVDEVDTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 120
DB 62 GPEFKYKRVDEVDTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAYN 160

RESULT 7
Q96370 PRELIMINARY; PRT; 160 AA.

AC Q96370;
DT 01-FEB-1997 (TREMBLrel. 02, Created)
DT 01-FEB-1997 (TREMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (white birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN OBTAINED FROM ALLERGEN, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/Genbank/DBJ databases.
CC -! SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
EMBL: 280105; CAB02160.1; -.
DR HSSP; P15494; 1BTV.
DR MENDEL; 30892; Betve;1174;30892.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM; PD000531; -. 1.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17541 MW; DBA110BBD1CDADB CRC64;

```

Query Match          97.8%; Score 800; DB 10; Length 160;
Best Local Similarity 97.5%; Pred. No. 4,9e-61;
Matches 155; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISVENISGNGPGTIKISFPE 60
DB 2 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISVENISGNGPGTIKISFPE 61
QY 61 GLPEKYVDRVDEVDHTNFKYNSVIEGGPIDTLEKISNEIKIVATPDGGSILKISNKY 120
DB 62 GFPEKYVDRVDEVDHTNFKYNSVIEGGPIDTLEKISNEIKIVATPDGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 160

RESULT 8
Q9SC10 PRELIMINARY; PRT; 160 AA.
AC Q9SC10;
DT 01-MAY-2000 (TREMBLrel. 13, Created)
DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BETV1, ISOFORM AT37.
GN BETV1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
RT of the protein derived from Austrian birch pollen.";
RL M01. Immunol. 36:639-645(1999).
DR EMBL; AJ006908; CAA07323.1; -.
DR INTERPRO; IPR000916; -.
DR PFM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV1; 1.
SQ SEQUENCE 160 AA; 17572 MW; 99A3581E5B3A03FB CRC64;

Query Match          97.7%; Score 799; DB 10; Length 160;
Best Local Similarity 96.9%; Pred. No. 5,9e-61;
Matches 154; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISVENISGNGPGTIKISFPE 60
DB 2 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISVENISGNGPGTIKISFPE 61
QY 61 GLPEKYVDRVDEVDHTNFKYNSVIEGGPIDTLEKISNEIKIVATPDGGSILKISNKY 120
DB 62 GFPEKYVDRVDEVDHTNFKYNSVIEGGPIDTLEKISNEIKIVATPDGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 160

RESULT 9
Q9SCH9 PRELIMINARY; PRT; 160 AA.
AC Q9SCH9;
DT 01-MAY-2000 (TREMBLrel. 13, Created)
DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BETV1, ISOFORM AT45.
GN BETV1.
OS Betula verrucosa (White birch) (Betula pendula).

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OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN;
RA Friedl-Hajek R., Radauer C., Riordan G., Hoffmann-Sommergruber K.,
RA Leberl K., Scheiner O., Breiteneder H.;
RT "New Bet v 1 isoforms including a naturally occurring truncated form
RT of the protein derived from Austrian birch pollen.";
RL M01. Immunol. 36:639-645(1999).
DR EMBL; AJ006910; CAA07325.1; -.
DR INTERPRO; IPR000916; -.
DR PFM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV1; 1.
DR PRODOM; PD000531; -.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17615 MW; 5A2A67BCC45CA3E CRC64;

Query Match          97.7%; Score 799; DB 10; Length 160;
Best Local Similarity 96.9%; Pred. No. 5,9e-61;
Matches 154; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISVENISGNGPGTIKISFPE 60
DB 2 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISVENISGNGPGTIKISFPE 61
QY 61 GLPEKYVDRVDEVDHTNFKYNSVIEGGPIDTLEKISNEIKIVATPDGGSILKISNKY 120
DB 62 GFPEKYVDRVDEVDHTNFKYNSVIEGGPIDTLEKISNEIKIVATPDGGSILKISNKY 121
QY 121 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 159
DB 122 HTKGDHEVKAEOVKASKEMGETLLRAVESYLLAHSDAVN 160

RESULT 10
Q96365 PRELIMINARY; PRT; 160 AA.
AC Q96365;
DT 01-FEB-1997 (TREMBLrel. 02, Created)
DT 01-FEB-1997 (TREMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-POLLEN OBTAINED FROM ALLERCON, SWEDEN;
RA Larsen J.N.;
RT Submitted (SSP-1996) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: BELONGS TO THE BETV1 FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
DR EMBL; Z80100; CAB02155.1; -.
DR HSSP; P15494; BETV.
DR MENDEL; 30888; Betv;1174;30888.
DR INTERPRO; IPR000916; -.
DR PFM; PF00407; Bet_v_1; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETV1; 1.
DR PRODOM; PD000531; -.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17558 MW; 4200581E49B893B9 CRC64;

Query Match          97.6%; Score 798; DB 10; Length 160;
Best Local Similarity 96.2%; Pred. No. 7,2e-61;
Matches 153; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 GFVNTEETTSYIPARLFKAFILDDGNLFPKVAPOAISVENISGNGPGTIKISFPE 60

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GenCore version 4.5
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OM protein - protein search, using sw model

Run on: December 11, 2000, 10:38:23 : Search time 12.26 Seconds
(without alignments)
217.376 Mi. 1 cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GFVNYETETTSVIPARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 164575 seqs, 16761186 residues

Total number of hits satisfying chosen parameters: 164575

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
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Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match length	ID	Description
1	810	99.0	160 1	US-07-847-010-23 Sequence 23, Appl
2	678	82.9	160 1	US-07-847-010-3 Sequence 3, Appl
3	616	75.3	160 1	US-07-847-010-14 Sequence 14, Appl
4	616	75.3	160 1	US-07-847-010-17 Sequence 17, Appl
5	610	74.6	160 1	US-07-847-010-11 Sequence 11, Appl
6	603	73.7	160 1	US-07-847-010-20 Sequence 20, Appl
7	372	45.5	158 5	5312912-2 Patent No. 5312912
8	276.5	33.8	154 1	US-08-363-010-1 Sequence 1, Appl
9	274.5	33.6	154 2	US-08-911-434A-4 Sequence 4, Appl
10	240	29.3	158 3	US-08-199-219-6 Sequence 6, Appl
11	79	9.7	669 2	US-08-357-533A-8 Sequence 8, Appl
12	79	9.7	669 2	US-08-459-009-8 Sequence 8, Appl
13	79	9.7	669 3	US-08-459-951-8 Sequence 8, Appl
14	78	9.5	1442 2	US-08-316-650-12 Sequence 12, Appl
15	78	9.5	1442 4	PCT-US95-02251-12 Sequence 12, Appl
16	75.5	9.2	3135 1	US-08-323-170B-2 Sequence 2, Appl
17	72	8.8	1008 2	US-08-680-326-30 Sequence 30, Appl
18	71.5	8.7	341 2	US-08-538-711A-7 Sequence 8, Appl
19	71.5	8.7	353 2	US-08-538-711A-7 Sequence 7, Appl
20	71.5	8.7	322 5	RE34606-6 Patent No. RE34606
21	70	8.6	1577 2	US-08-793-824-2 Sequence 2, Appl
22	69.5	8.5	836 1	US-08-426-627-6 Sequence 6, Appl
23	69.5	8.5	837 1	US-08-426-627-23 Sequence 23, Appl
24	69	8.4	436 3	US-08-669-378-2 Sequence 2, Appl
25	69	8.4	436 3	US-08-669-378-4 Sequence 4, Appl
26	69	8.4	436 3	US-08-669-378-6 Sequence 6, Appl
27	69	8.4	436 3	US-08-669-378-10 Sequence 10, Appl
28	69	8.4	436 3	US-08-669-378-12 Sequence 12, Appl

29	69	8.4	997 2	US-08-387-942C-4 Sequence 4, Appl
30	68.5	8.4	769 1	US-09-320-878-12 Sequence 12, Appl
31	67	8.2	780 1	US-08-485-621-2 Sequence 2, Appl
32	67	8.2	780 2	US-08-973-831-2 Sequence 2, Appl
33	67	8.2	780 4	PCT-US96-0930A-2 Sequence 2, Appl
34	67	8.2	983 3	US-08-164-292B-26 Sequence 26, Appl
35	67	8.2	983 3	US-08-845-623-26 Sequence 26, Appl
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39	66.5	8.1	906 3	US-08-367-264-2 Sequence 2, Appl
40	66	8.1	310 1	US-08-129-456A-37 Sequence 37, Appl
41	66	8.1	436 3	US-08-669-378-8 Sequence 8, Appl
42	66	8.1	720 1	US-07-731-157A-2 Sequence 2, Appl
43	66	8.1	720 2	US-08-541-780-2 Sequence 2, Appl
44	66	8.1	1147 3	US-08-470-260-5 Sequence 5, Appl
45	66	8.1	1147 3	US-08-471-491-5 Sequence 5, Appl

ALIGNMENTS

RESULT 1
US-07-847-010-23
Sequence 23, Application US/07847010
Patent No. 5693495.
GENERAL INFORMATION:
APPLICANT: Breiteneder, Helmo
APPLICANT: Reikerstorfer, Arnold
APPLICANT: Valenta, Rudolf
APPLICANT: Hoffmann - Sommergruber, Karin
APPLICANT: Breitenbach, Michael
APPLICANT: Kraft, Dietrich
APPLICANT: Rumpold, Helmut
APPLICANT: Schaller, Otto
APPLICANT: Edner, Christof
APPLICANT: Ferreira, Fatima
TITLE OF INVENTION: Allergens of Alder Pollen and
TITLE OF INVENTION: Applications Thereof
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Panle & Edmonds
STREET: 1155 Avenue of the Americas
CITY: New York
STATE: New York
COUNTRY: U.S.A.
ZIP: 10036-2711
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/847,010
FILING DATE: 01-JUN-1992
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jones III, Harry C
REGISTRATION NUMBER: 20,280
REFERENCE/DOCKET NUMBER: 6530-010
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 790-9090
TELEFAX: (212) 869-9741/8864
TELEX: 66141 PENNIE
INFORMATION FOR SEQ ID NO: 23:
SEQUENCE CHARACTERISTICS:
LENGTH: 160 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: birch (Betula sp.)

IMMEDIATE SOURCE:
LIBRARY: POLLEN FROM ALLERCON AB, ENGELHOLM, SWEDEN

Db 5 SMSHEVAVNAAGRMFKAMLDHNLGPKIVDFIAGSGSVSGDVGITREIKINPAI 64
QY 63 PKFYKDVDEVDHTNFKYNSVIEGGPIGDTLEKISNEIKIYATPDGGSILKISKNYH 122
Db 65 PFSYKERLDYVDHDKFEKQTLVEGGGLGKMEBCATTFKFEPPSSNGGLVKNVASY-- 122
QY 123 KGDHEVKAQVAKSKEMGETLLRAVESYLLASHAD 158
Db 123 KILPGVADESAKA-KEGILNHHKATEAYLLANPTAY 157

RESULT 11
US-08-357-533A-8
; Sequence 8, Application US/08357533A
; Patent No. 5831050
; GENERAL INFORMATION:
; APPLICANT: JIN, DONALD F
; APPLICANT: OPPERMAN, HERMANN
; APPLICANT: KUBERASAMPATH, THANGAVEL
; APPLICANT: SMART, JOHN E
; TITLE OF INVENTION: NOVEL MORPHOGEN CELL SURFACE RECEPTOR
; NUMBER OF SEQUENCES: 12
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
; ADDRESSEE: INC
; STREET: 45 SOUTH STREET
; CITY: HOPKINTON
; STATE: MA
; COUNTRY: USA
; ZIP: 01748
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/357,533A
; FILING DATE: 16-DEC-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: KELLY, ROBIN D
; REGISTRATION NUMBER: 34,637
; REFERENCE/DOCKET NUMBER: CRP-073FW
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (508)-435-9001
; TELEFAX: (508)-435-0992
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 669 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
; NAME/KEY: Protein
; LOCATION: 1..669
; OTHER INFORMATION: /note= "C ELEGANS RECEPTOR KINASE"
US-08-357-533A-8

Query Match 9.7%; Score 79; DB 2; Length 669;
Best Local Similarity 24.5%; Pred. No. 2.2;
Matches 39; Conservative 25; Mismatches 53; Indels 42; Gaps 9;
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Db 216 ETENNVPVWTM-----GDGAGSSVPEVAPIEQGSTSTSTAGN-----SFPPI 259
QY 63 PKFYKDVDEVDHTNFKYNSVIEGGPIG-DTLEK--ISNEIKIYATPDGGSILKISKN 119
Db 260 MPNNKMDLDVLEETS-----GSGMGPTTLHKLTIGGQIRLTGRVSGRFGVNS-- 308
QY 120 YHTKGDHEVKAQVAKSKEMGETLL---RAVESYLLAH 154

Db 309 ---RGDYRGEAVAVKVFNALDEPAFHKEITETRLRH 344

RESULT 12
US-08-459-009-8
; Sequence 8, Application US/08459009
; Patent No. 5861479
; GENERAL INFORMATION:
; APPLICANT: JIN, DONALD F
; APPLICANT: OPPERMAN, HERMANN
; APPLICANT: KUBERASAMPATH, THANGAVEL
; APPLICANT: SMART, JOHN E
; TITLE OF INVENTION: NOVEL MORPHOGEN CELL SURFACE RECEPTOR
; NUMBER OF SEQUENCES: 12
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
; ADDRESSEE: INC
; STREET: 45 SOUTH STREET
; CITY: HOPKINTON
; STATE: MA
; COUNTRY: USA
; ZIP: 01748
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/459,009
; FILING DATE:
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/357,533
; FILING DATE: 16-DEC-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: KELLY, ROBIN D
; REGISTRATION NUMBER: 34,637
; REFERENCE/DOCKET NUMBER: CRP-073FW
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (508)-435-9001
; TELEFAX: (508)-435-0992
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 669 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
; NAME/KEY: Protein
; LOCATION: 1..669
; OTHER INFORMATION: /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-009-8

Query Match 9.7%; Score 79; DB 2; Length 669;
Best Local Similarity 24.5%; Pred. No. 2.2;
Matches 39; Conservative 25; Mismatches 53; Indels 42; Gaps 9;
QY 8 ETTSVIPARLFKAFILGD---NLFPKYAP--QAISSEVENISGNGGPGTIIKISPEGL 62
Db 216 ETENNVPVWTM-----GDGAGSSVPEVAPIEQGSTSTSTAGN-----SFPPI 259
QY 63 PKFYKDVDEVDHTNFKYNSVIEGGPIG-DTLEK--ISNEIKIYATPDGGSILKISKN 119
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QY 120 YHTKGDHEVKAQVAKSKEMGETLL---RAVESYLLAH 154
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RESULT 13
US-08-459-951-8
; Sequence 8, Application US/08459951
; Patent No. 6093547
; GENERAL INFORMATION:
; APPLICANT: JIN, DONALD F
; APPLICANT: OPPERMANN, HERMANN
; APPLICANT: KUBERASAMPATH, THANGAVEL
; APPLICANT: SMART, JOHN E
; TITLE OF INVENTION: NOVEL MORPHOGEN CELL SURFACE RECEPTOR
; NUMBER OF SEQUENCES: 12
; CORRESPONDENCE ADDRESSES:
; ADDRESS: PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
; ADDRESS: INC
; STREET: 45 SOUTH STREET
; CITY: HOPKINTON
; STATE: MA
; COUNTRY: USA
; ZIP: 01748
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/459,951
FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/357,533
FILING DATE: 16-DEC-1994
ATTORNEY/AGENT INFORMATION:
NAME: KELLY, ROBIN D
REGISTRATION NUMBER: 34,637
REFERENCE/DOCKET NUMBER: CRP-073FW
TELECOMMUNICATION INFORMATION:
TELEPHONE: (508)-435-9001
TELEFAX: (508)-435-0992
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 669 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
FEATURE:
NAME/KEY: Protein
LOCATION: 1..669
OTHER INFORMATION: /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-951-8

Query Match          9.7%; Score 79; DB 3; Length 669;
Best Local Similarity 24.5%; Pred. No. 2.2; Indels 42; Gaps 9
Matches 39; Conservative 25; Mismatches 53;

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Db     216 ENNVNVPWTM-----GDGAGSSVPEVAPIEQGSTMTSGAGN-----SPPEI 259

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Db     260 MPNNKKMDIMDVLEETS-----GSGMGPTLHLKLITIGGIIRLGRVGSGRFGNVS-- 308

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Db     309 ---RGDYRGEAAVAKVFNALDEPAFHKETEIFETRLRH 344

RESULT 14
US-08-316-650-12
; Sequence 12, Application US/08316650
; Patent No. 5942496
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1 GENERAL INFORMATION:
2 APPLICANT: Bonadio, Jeffrey
3 APPLICANT: Roesler, Blake J.
4 APPLICANT: Goldstein, Steven A.
5 APPLICANT: Lin, Mushan
6 TITLE OF INVENTION: METHODS AND COMPOSITIONS
7 TITLE OF INVENTION: FOR STIMULATING BONE CELLS
8 NUMBER OF SEQUENCES: 15
9 CORRESPONDENCE ADDRESS:
10 ADDRESSEE: Arnold, White & Durkee
11 STREET: P.O. Box 4433
12 CITY: Houston
13 STATE: Texas
14 COUNTRY: USA
15 ZIP: 77210
16 COMPUTER READABLE FORM:
17 MEDIUM TYPE: Floppy disk
18 COMPUTER: IBM PC compatible
19 OPERATING SYSTEM: PC-DOS/MS-DOS
20 SOFTWARE: Patentln Release #1.0, Version #1.25
21 CURRENT APPLICATION DATA:
22 APPLICATION NUMBER: US/08/316,650
23 FILING DATE: 30-SEP-1994
24 CLASSIFICATION: 514
25 PRIOR APPLICATION DATA:
26 APPLICATION NUMBER: US 08/199,780
27 FILING DATE: 30-SEP-1994
28 ATTORNEY/AGENT INFORMATION:
29 NAME: Parker, David L.
30 REGISTRATION NUMBER: 32,165
31 REFERENCE/DOCKET NUMBER: UMIC.008
32 TELECOMMUNICATION INFORMATION:
33 TELEPHONE: (512) 418-3000
34 TELEFAX: (713) 789-2679
35 TELE: 79-0924
36 INFORMATION FOR SEQ ID NO: 12:
37 SEQUENCE CHARACTERISTICS:
38 LENGTH: 1442 amino acids
39 TYPE: amino acid
40 STRANDEDNESS: single
41 TOPOLOGY: linear
42 MOLECULE TYPE: peptide
43 US-08-316-650-12
44
45 Query Match 9.5%; Score 78; DB 2; Length 1442;
46 Best Local Similarity 24.1%; Pred. No. 8.8;
47 Matches 38; Conservative 18; Mismatches 52; Indels 50; Gaps 7;
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49 QY 25 DGDNIFF-----KVAPOAIISSVENISGNGSPGTIKIISFEGT----- 62
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51 Db 1130 DGSNIDIPGIPGPPGRSGSGTGPVGPSPGPPGPPGPI--DMSAFAGLGQREK 1187
52
53 QY 63 --PRTYVADRDVDDHTNFKNYNSYIEGPIGDTLEKISNEKIYATPDG-----S 112
54 ||| ||| ||| |||
55 Db 1188 PDPQMYM--RADEADSTLRQHDVEY-----DAILKSLNNOIESIRSPDSRKNPARTQ 1239
56 ||| ||| ||| |||
57 QY 113 ILKISNRYHTKGDHVEKAQO-----VKASKEMGT 142
58 ||| ||| ||| |||
59 Db 1240 DLKLCHEPKSGDIWIDPNQCTILDAMKVFQCMETGET 1277
60
61 RESULT 15
62 PCT-US95-02251-12
63 Sequence 12, Application PC/TUS9502251
64 GENERAL INFORMATION:
65 APPLICANT:
66 TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR STIMULATING BONE
67 TITLE OF INVENTION: CELLS
68 NUMBER OF SEQUENCES: 18
69 CORRESPONDENCE ADDRESS:
70 ADDRESSEE: Arnold, White & Durkee
71 STREET: P.O. Box 4433
72

```

CITY: Houston
STATE: Texas
COUNTRY: United States of America
ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS/ASCII
SOFTWARE: Patent Release #1.0, Version
SOFTWARE: #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/02251
FILING DATE: CONCURRENTLY HERewith
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/316,650
FILING DATE: 30-SEP-1994
CLASSIFICATION:
APPLICATION NUMBER: US 08/199,780
FILING DATE: 18-FEB-1994
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Parker, David L.
REGISTRATION NUMBER: 32,165
REFERENCE/DOCKET NUMBER: DMIC009P--
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INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 1442 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: peptide
PCT-US95-02251-12

Query Match 9.5%; Score 78; DB 4; Length 1442;
Best Local Similarity 24.1%; Pred. No. 8.8;
Matches 38; Conservative 18; Mismatches 52; Indels 50; Gaps 7;
QY 25 DGDNLFP-----KVAPQAISSEVENISGNGSGPGTIRKISFPEGL----- 62
DB 1130 DGSNGIPGPICPPGRGRSGETGPGPPGPPGPGI--DMSAFAGLGOREKG 1187
QY 63 --PKKYKDRDEVDTHTFKYNYSYIEGGPIGDTLEKISNEIKIYATPDG-----S 112
DB 1188 PDPNQYM--RADPADSTLRQHDVEY-----DATLKSINNOIESIRSPGSRKRNPAFTCQ 1239
QY 113 LKISNKYHTKGDHVKRAEQ-----VKASKENGET 142
DB 1240 DLKLCHEMKSGDYWIDPNQCTLDAMKVFQCMETGET 1277

Search completed: December 11, 2000, 10:41:41
Job time: 198 sec